

Personality and Neuropsychological Factors Involved
in Females' Relational Aggression

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Abstract

The personality and neuropsychological factors associated with relational aggression were examined in a group of 30 grade 6, 7, and 8 girls identified through cluster analysis as being highly, yet almost exclusively, relationally aggressive and a group of 30 nonaggressive matched controls. Parents of the students in both groups completed the Coolidge Personality and Neuropsychological Inventory (1998), a 200-item DSM-IV-TR aligned, parent-as-respondent, standardized measure of children's psychological functioning. It was found that high levels of relational aggression, in the absence of physical and verbal aggression, were associated with symptoms of DSM-IV-TR Axis I oppositional defiant disorder and conduct disorder and a wide variety of personality traits associated with DSM-IV-TR Axis II paranoid, borderline, narcissistic, histrionic, schizotypal, and passive aggressive personality disorders. Implications of these findings for theory, practice, and further research are discussed.

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CHAPTER ONE: THE PROBLEM

The goal of this study was twofold: (a) to examine the association between females who are highly, yet almost exclusively, relationally aggressive with Diagnostic and Statistical Manual of Mental Disorders, 4th edition, text revised (American Psychiatric Association [APA], 2000) clinical syndromes (Axis I), personality disorders (Axis II), neuropsychological dysfunction, and other clinically relevant psychopathological behaviours; and (b) to explore whether females who were highly, yet almost exclusively, relationally aggressive were manifesting a symptom of underlying psychopathology. Few studies have examined this association, and none to date have done so explicitly. Studies conducted on children and adolescents have found that high levels of relational aggression are positively correlated with maladaptive personality features and externalizing behaviours (Crick, 1996; Crick, Casas, & Mosher, 1997; Crick & Grotpeter, 1995; Prinstein, Borgers, & Vernberg, 2001). These findings, however, are of limited utility when dealing with females whose primary means of aggression is relational, due to the fact that the children and adolescents in these studies also engaged in more overt forms of aggression.

Other studies (Essau, Sasagawa, & Frick, 2006; Frick, Cornell, Barry, Bodin, & Dane, 2003; Marsee, Silverthorn, & Frick, 2005) have examined the association between callous-unemotional traits, aggression, and antisocial behaviours, finding strong correlations between callous-unemotional traits, antisocial behaviours, and relational aggression in girls. The difficulty with these studies is that those traits considered “callous-unemotional” and those behaviours considered “antisocial” are not found in any one specific DSM-IV-TR (APA, 2000) diagnosis, but rather are scattered throughout a

variety of diagnostic categories. This makes these existing studies' findings difficult to generalize from a diagnostic and intervention standpoint.

The Diagnostic and Statistical Manual of Mental Disorders (DSM) is the standard classification of mental disorders used by mental health professionals in North America. The most recent version of the DSM, the DSM-IV-TR (APA, 2000), contains three major components: the diagnostic classification, the diagnostic criteria sets for each disorder, and the descriptive text. The diagnostic classification is the list of mental disorders that is officially part of the DSM system. Associated with each diagnostic label is a diagnostic code which is used by institutions and agencies for data collection and billing purposes. Other disorders, such as psychopathy, may be diagnosed by clinicians and researchers, but they are not recognized as “official” disorders, and treatment services for them will not be covered by an insurance company, which is why it is important to receive a “DSM diagnosis” (Lenzenweger & Clarkin, 2005). For each disorder included in the DSM is a set of diagnostic criteria that indicate what symptoms must be present, as well as how long they must be present, in order to diagnose the disorder. The diagnostic criteria also include symptoms that must not be present in order for a person to qualify for the diagnosis. Finally, the DSM includes descriptive text for each disorder. This text systematically describes each disorder’s diagnostic features, associated features and disorders, prevalence, course, familial pattern, and differential diagnosis (Lenzenweger & Clarkin, 2005).

Identifying which disorders in the DSM relational aggression is associated with also has implications for education. For example, Yoon, Barton, and Taiariol (2004) argue that one of the first steps that should be taken in order to reduce relational

aggression in the schools is for teachers and school administrators to be able to identify the signs of relational aggression and understand the concomitant behaviours that accompany chronic use of this form of aggression. Since relational aggression is almost always practiced covertly, knowing which DSM disorders relational aggression is associated with may permit educators to understand the range of behaviours that highly relationally aggressive females engage in.

Associating relational aggression with DSM disorders explicitly may facilitate a change in teachers' attitudes toward relational aggression. Jeffrey, Miller, and Linn (2001) found that many teachers and school administrators held the general opinion that interpersonal aggression was a normative feature of middle school students. This perception has been found to lead to teachers being much less likely to intervene in incidents of relational aggression than in incidents of physical or verbal aggression (Craig, Henderson, & Murphy, 2000). Identifying relational aggression as a symptom of underlying psychopathology may serve as an impetus to revising teacher and school administrators' attitudes. This revised attitude may serve as a stimulus to augmenting teacher interventions regarding interpersonal aggression incidents.

Although the findings from previous research (Crick, 1996; Crick et al., 1997; Crick & Grotpeter, 1995; Frick et al., 2003; Marsee et al., 2005; Prinstein et al., 2001) have important implications, their results should be examined with caution. Specifically, caution must be exercised when considering these findings from previous research if one is interested in the personality and neuropsychological correlates of relational aggression and the diagnostic categories from the DSM-IV-TR (APA, 2000) in girls/women. The reason for this is that no study to date has examined these correlates explicitly, and so any

information garnered from previous studies is merely an extrapolation.

Background of the Problem

Over the past several years there has been an increasing concern over how young females are developing socially and behaviourally (Cote, Zoccolillo, Tremblay, Nagin, & Vitaro, 2001). This concern is reflected in the empirical research that has been conducted on the negative trajectories of females (e.g., Cote et al., 2001; Moffitt, Caspi, Rutter, & Silva, 2001) as well as in the media attention they have been receiving. The latter has largely been fueled by dramatic and tragic events that have involved adolescent girls, such as the brutal death of Reena Virk. Reena, who was 14 years old at the time, was swarmed and beaten under a bridge in Saanich, on Vancouver Island, by a group of her predominantly female teenage peers. After the initial beating, two of the original attackers returned, beat her again, and then drowned her in Victoria's Gorge waterway. Witnesses later testified that Kelly Ellard, who had been relationally aggressive toward Virk for months prior to the incident, was the leader of the attack and the one who held Reena under the water (Tafler, 1998). Teachers, juvenile justice workers, and mental health professionals who work with these troubled girls argue that the risk factors, characteristics, and outcomes for disruptive behaviours may differ in males and females (Chamberlain & Reid, 1994). Therefore, a better understanding of the sex differences in antisocial behaviour should be a priority, especially as they relate to interpersonal relationships.

Underwood (2003) argues that both males and females view social, or relational, aggression as hurtful. The limited empirical research supports this claim. In one study (Galen & Underwood, 1997), females rated relational and physical aggression as equally

hurtful. In another study (Paquette & Underwood, 1999), in which children were asked to describe personal experiences, both males and females reported that being the victim of relational aggression hurt worse than a physical attack.

Some researchers, such as Crick and Grotpeter (1995), propose that the sex differences in the rates of antisocial behaviours may be explained by males' propensity to use greater amounts of physical aggression and females' tendency to use relational, or social, aggression to express anger or inflict harm. These socially aggressive behaviours attempt to damage another's self-esteem or social status and are typically accomplished using verbal rejection, negative facial expressions, circulating rumours, manipulating social networks, or social exclusionary tactics (Galen & Underwood, 1997; Underwood, 2003). Several studies have found that these relationally aggressive behaviours are more commonly found in females than males (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Crick & Grotpeter, 1995; Kazdin, 1992) and are perceived as more harmful by females than males (Crick, 1995).

A recent study conducted by Salmivalli and Kaukiainen (2004) investigated whether females were more relationally aggressive than males. Their sample included 272 girls and 274 boys from 22 school classes in Finland. The participants were from three grade levels and were aged 10, 12, and 14 years. Aggression was measured using the Direct and Indirect Aggression Scales (DIAS; Bjorkqvist, Lagerspetz, & Osterman, 1992), which was administered as a peer- and self-report measure. Each child evaluated all his/her same-sex classmates, and themselves, in terms of their use of direct physical (hitting, kicking, etc.), direct verbal (yelling, insulting, etc.), and indirect (rumour spreading, social exclusion, etc.) aggression using a 5-point Likert scale, with 0 = *never*

and 4 = *very often*. Multivariate analyses of variance, with both peer- and self-reports of physical, verbal, and indirect aggression as dependent variables, were conducted across all age groups and in each age group separately. The analyses indicated that males used all three types of aggression more than females. This finding held true across age groups and within each age group.

To further explore these findings Salmivalli and Kaukiainen (2004) created “aggression profiles” by using K-means cluster analysis with the standardized peer-report scores on the three aggression scales from the DIAS as criterion variables. From this procedure five clusters, the “aggression profiles”, emerged. Females and males were not equally represented in these clusters. There were more males than would have been expected by chance in clusters two (extremely high scores on all three kinds of aggression) and three (high scores on physical and verbal aggression). Conversely, females were significantly overrepresented in cluster four (nonaggressive children) and cluster five. Cluster five is the most interesting, as it contained children who were very high on indirect/relational aggression, slightly above average on verbal aggression and average on physical aggression. This cluster was made up entirely of females. Salmivalli and Kaukiainen did not find one male who fit the profile of being highly, yet almost exclusively, relationally aggressive. This was in direct contrast to highly aggressive males who were found to favour physical and verbal aggression or to employ high levels of all forms of aggression. From these findings it appears that there is a group of females in the population who are highly aggressive but who employ relationally aggressive behaviours almost exclusively in order to inflict harm.

Unfortunately, we know very little about girls and women who are highly

aggressive but whose aggression is almost exclusively relational in nature. Salmivalli and Kaukianen (2004) state that, "it would be enlightening to see whether students in our cluster five [the highly relationally aggressive females] suffer from adjustment difficulties, or whether they are in fact relatively well-adjusted" (p. 162). The present study aimed to shed light on this inquiry.

Statement of the Problem Situation

Few studies have examined the relationship between high levels of relational aggression, antisocial behaviours, and personality dimensions. Several studies conducted on children and adolescents have found that high levels of relational aggression are positively correlated with maladaptive personality features and externalizing behaviours (Crick, 1996; Crick et al., 1997; Crick & Grotpeter, 1995; Prinstein et al., 2001). The limitation of these particular studies is that the more overt forms of aggression were not controlled for when analyzing the behavioural and personality correlates of relational aggression. As a result, the participants in these studies also regularly engaged in other forms of aggression (e.g., physical) as well as being relationally aggressive.

Frick et al. (2003), Marsee et al. (2005), and Essau et al. (2006) found a strong correlation between high levels of relational aggression and callous-unemotional personality traits and antisocial behaviours in females. Interestingly, this relationship was found only in females, not in males. The problem with these studies is that the researchers used an alternate conception of personality pathology and antisocial behaviour than the one used by the diagnostic standard, the DSM-IV-TR (APA, 2000). As a result, these findings have no diagnostic utility for clinicians, as the callous-unemotional personality traits and antisocial behaviours defined by Frick et al. and

Marsee et al. are found scattered throughout numerous DSM-IV-TR (APA, 2000) Axis I and Axis II diagnostic categories. Specifically, these two studies demonstrate that the study of personality traits, particularly those characteristic of personality pathology, are important for understanding the development of antisocial and aggressive behaviours in females. Thus, it would be particularly salient to examine the association between highly, almost exclusively, relationally aggressive girls with DSM-IV-TR (APA, 2000) clinical syndromes (Axis I), personality disorders (Axis II), neuropsychological dysfunction, and other psychopathological behaviours so that the association would have some diagnostic and treatment utility.

Purpose of the Study

The purpose of this study was to examine the association between relational aggression and DSM-IV-TR (APA, 2000) clinical syndromes (Axis I), personality disorders (Axis II), neuropsychological dysfunction, and other clinically relevant psychopathological behaviours in adolescent girls. The purpose was initiated in order to ascertain whether females who were highly, almost exclusively, relationally aggressive were manifesting a symptom of underlying psychopathology.

Research Questions

The leading question this study sought to answer was: Are highly aggressive females, whose aggression is primarily relational in nature, manifesting a symptom of underlying psychopathology? This leading question was addressed through more specific queries such as: (a) Do females who are highly relationally aggressive also exhibit behaviours that are associated with Axis I disorders found in the DSM-IV-TR (APA, 2000); (b) Do these relationally aggressive females have personality traits typically

associated with any of the DSM-IV-TR (APA, 2000) personality disorders?; (c) Do highly relationally aggressive females have high levels of neuropsychological behavioural impairment?; (d) Do highly relationally aggressive females exhibit other clinically relevant psychopathological behaviours?

Rationale for the Study

The past decade has seen a proliferation of research on what Crick and Grotpeter (1995) referred to as “relational aggression”. In particular the idea that this kind of aggression was typically “female” was explored in great detail (Crick, 1996; Galen & Underwood, 1997; Goldstein, Tisak, & Boxer, 2002; Henington, Hughes, Cavell, & Thompson, 1998; Lagerspetz, Bjorkqvist, & Peltonen, 1988; Paquette & Underwood, 1999) with conflicting results. Salmivalli and Kaukiainen (2004) found a group of highly aggressive females who used relational aggression almost exclusively. This was in direct contrast to highly aggressive males, who were found to favour physical and verbal aggression or to employ high levels of all forms of aggression. Salmivalli and Kaukiainen found no highly aggressive males who almost exclusively used relational aggression.

Yet, there is only a meager amount of research on this particular group of females. In particular, there is no substantive evidence to support a link between high levels of relational aggression and diagnoses from the DSM-IV-TR (APA, 2000). To date, to my knowledge, there have been no published empirical studies that examined the association between relational aggression and diagnoses from the DSM-IV-TR (APA, 2000). The goal of this study was to examine the association between relational aggression and DSM-IV-TR (2000) clinical syndromes (Axis I), personality disorders (Axis II), neuropsychological dysfunction, and other clinically relevant psychopathological

behaviours in girls.

Theoretical Framework

Pincus's (2005a, 2005b) contemporary integrative interpersonal theory of personality disorders (CIIT) provides the theoretical framework for this study. Livesley (1998, 2001) contends that the core clinical features of personality disorder are chronic interpersonal dysfunction and problems with the self and identity. Pincus (2005a, 2005b) uses this as the starting point for his entire theory. Pincus's CIIT theory enhances the explanatory implications of Livesley's core defining features of personality disorder by emphasizing the "interpersonal situation" as an integrative theoretical concept (Pincus, 2005b; Pincus & Ansell, 2003). According to Pincus's (2005b) CIIT theory, motivational and developmental factors influence problematic self-concepts and maladaptive patterns of relating to others and also account for the fluctuating severity of personality disorder symptomology.

Pincus (2005a, 2005b) argues that the elaboration of interpersonal input may be healthy or maladaptive depending on the developmental history of the interpersonal situations characterizing a person's life. In normative social environments, generally accurate interpretations of interpersonal input from others may lead to adaptive relationship-enhancing behaviours (output) and a positive, stable self-image. Serious distortions of interpersonal input, however, Pincus contends, may lead to both chronic interpersonal dysfunction and problems with self or identity—Livesley's (1998, 2001) core features of personality disorder.

In this study it is argued that highly relationally aggressive females elaborate interpersonal input maladaptively. That is, they severely distort interpersonal input and

this leads to both chronic interpersonal dysfunction (the relational aggression) and problems with the self or identity (manifesting as psychopathological symptoms), meaning they demonstrate Livesley's (1998, 2001) core features of personality disorder.

Importance of the Study

This study augments the existing body of literature on relational aggression, antisocial behaviours, and personality pathology in females. These highly, yet almost exclusively, relationally aggressive females have been virtually ignored by the research community and by society as a whole. As a result we know very little about these girls or the adult women they become. This study provides some-much needed insight into the relationship between high levels of relational aggression and the DSM-IV-TR (APA, 2000) clinical syndromes (Axis I), personality disorders (Axis II), neuropsychological dysfunction, and other clinically relevant psychopathological behaviours. It has far reaching implications for how relational aggression is viewed and how girls, and women, who chronically relationally aggress are treated for their aggression.

Scope and Limitations of the Study

This study has several limitations which must be acknowledged. The first is that the participants' aggression profiles were created exclusively from self report data. By exclusively using self reports to measure aggression it was assumed that the participants could accurately evaluate the type of aggression they used as well as how frequently they used aggressive behaviours. It was also assumed the participants would be willing to report their aggressive tactics honestly. This may not be the case. It is possible that they over or under estimated their aggressive behaviours or that they did not report their use of aggression honestly. Future studies should augment the self-reports with peer and teacher

reports of aggressive behaviours. This would make any findings more robust.

Further, psychopathology was assessed in this study using a measure based on the psychiatric, categorical, diagnostic scheme used in the DSM-IV-TR (APA, 2000). This scheme narrowly focuses on clinically relevant symptoms rather than assessing a whole range of personality traits and behaviours. The limitation to this is that only those participants who exhibited clinically significant symptomology were identified. It is possible that some females who did not exhibit clinically relevant symptoms are still at risk for developing psychopathology but the measure did not identify them.

Definition of Terms

Aggression:	any behaviour that is intended to harm another person or persons (Salmivalli & Kaukiainen, 2004).
Callous-unemotional traits:	personality traits typical of psychopaths. They include interpersonal arrogance, deceitfulness, callousness, lack of affect, lack of empathy and guilt, lack of fear, and impulsivity (Marsee et al., 2005).
Dangerousness:	the potential for an individual to inflict harm on themselves or others (Coolidge, 1998).
Disinhibition:	failure to self-inhibit behaviour (Coolidge, 1998).
Emotional lability:	rapidly shifting and shallow emotions (Coolidge, 1998).

- Externalizing behaviours: disruptive, overt behaviours that often involve the violation of societal norms, the destruction of property, and/or harm toward others (Keil & Price, 2006).
- Interpersonal situation: the experience of a pattern of relating self with other associated with varying levels of anxiety (or security) in which learning takes place that influences the development of self-concept and social behaviour (Pincus & Ansell, 2003).
- Personality disorder: core clinical features are chronic interpersonal dysfunction and problems with the self and identity (Livesley, 2001)
- Physical aggression: behaviours in which physical damage, or the threat of physical damage, serves as the agent of harm (Ostrov, Crick, & Stauffacher, 2006).
- Relational aggression: behaviours in which damage to relationships, or the threat of damage to relationships, serves as the vehicle of harm (Crick & Grotpeter, 1995).
- Verbal aggression: verbal acts intended to cause harm to another person; such as name calling (Haden & Hojjat, 2006)

Outline of the Remainder of the Document

In Chapter Two the theoretical and empirical evidence concerning females'

antisocial behaviours and their possible link to underlying psychopathology, specifically personality disorders and their comorbid Axis I syndromes, is delineated. Pincus's (2005a, 2005b) contemporary integrative interpersonal theory of personality disorders provides the theoretical framework for this study, so the major tenets of this theory are examined first. Females who persistently use relational aggression in order to inflict harm on others can be seen to be exhibiting chronic interpersonal dysfunction due to the fact they severely distort incoming interpersonal information. These distortions of interpersonal input will also affect these females' view of themselves. These two facts indicate an underlying personality disorder, according to Pincus.

It is important to note, however, that the highly relationally aggressive females may meet the theoretical criteria for a personality disorder and yet not be diagnosed with personality pathology. In order to be officially diagnosed with a personality disorder the diagnostic criteria outlined in the DSM-IV-TR (APA, 2000) for a mental disorder must be met. The difficulty is that these diagnostic criteria currently have some limitations. Thus, the next section of Chapter Two discusses several problems with the current DSM-IV-TR (APA, 2000) classification scheme for the Axis I and Axis II disorders. This discussion is particularly salient for the diagnosis of persistent problem behaviours in females.

The latter half of the literature review examines the kinds of antisocial behaviours females have been found to engage in and how those behaviours have been used to diagnose underlying psychopathology. Since this study involved females who are highly relationally aggressive, an entire section of Chapter Two is dedicated to an examination of the empirical evidence on this type of aggression. Chapter Two concludes with a

review of the current empirical evidence that links relational aggression to antisocial behaviours and underlying personality pathology.

Chapter Three contains a detailed description of the quantitative methodology used in the data collection and analysis of a sample of female elementary school students who are highly, yet almost exclusively, relationally aggressive. Specifically, Chapter Three details the methods used to examine the personality and neuropsychological correlates of their aggressive behaviour. It includes the research design, delineation of the sample, instruments, the procedures used to gather the data, and the method of data analysis. The chapter concludes with a summary outlining the key points.

Chapter Four presents the research findings. Chapter Five provides a summary and interpretation of the findings of the study, describes conclusions made based on the findings of this study, and outlines the practical and theoretical implications of the findings. The chapter concludes with recommendations for further research.

CHAPTER TWO: REVIEW OF THE RELATED LITERATURE

This chapter examines the theoretical and empirical evidence concerning female's antisocial behaviours and their possible link to underlying psychopathology, specifically personality disorders and their comorbid Axis I syndromes. Since Pincus's contemporary integrative interpersonal theory of personality disorders provides the theoretical framework for this study, an examination of the major tenets of this theory is provided initially. Subsequently, consideration is given to the numerous limitations of the current DSM-IV-TR (APA, 2000) classification scheme for the Axis I and Axis II disorders. Specifically, this examination of the DSM demonstrates that the diagnostic criteria underlying the Axis I and Axis II disorders indicate the presence of psychopathology, but how that psychopathology is classified is currently limited. This is particularly salient for the diagnosis of persistent problem behaviours in females.

The latter half of the literature review is devoted to discussing the types of antisocial behaviour females have been found to engage in and how those problem behaviours have been used to diagnose underlying psychopathology. Finally the review is refined further to examine the empirical evidence that suggests that a subgroup of females tend to use relational aggression and covert bullying behaviours in order to achieve the same results that antisocial males achieve using physical and verbal aggression. The idea that these behaviours, when exhibited chronically and persistently, are symptoms of an underlying psychopathology is then explored.

Pincus' Contemporary Integrated Interpersonal Theory of Personality Disorders (CIIP)

Livesley (1998, 2001) states that the core clinical features of personality disorder are chronic interpersonal dysfunction and self and identity difficulties. Pincus (2005a,

2005b) uses this as the starting point for his theoretical framework. Specifically, Pincus's CIIT theory enhances the explanatory implications of Livesley's core defining features of personality disorder by emphasizing the "interpersonal situation" as an integrative theoretical concept (Pincus, 2005b; Pincus & Ansell, 2003). The theory also articulates the motivational and developmental factors influencing problematic self-concepts and maladaptive patterns of relating to others while also accounting for the fluctuating severity of personality disorder symptomology.

The Interpersonal Situation

Pincus began his contemporary interpersonal theory by reexamining the Sullivanian concept of the "interpersonal situation" (Pincus & Ansell, 2003). Pincus found that one of the most basic implications of Sullivan's concept was that the way personality is expressed focuses on phenomena involving some form of relating (i.e., more than one person is involved). Sullivan's (1953b) interpersonal theory suggests that individuals exhibit what he referred to as "integrating tendencies" that bring them together in the mutual pursuit of security (which he defined as felt self-esteem and anxiety-free functioning) and satisfactions (which were Sullivan's term for a large number of biologically based needs). These integrating tendencies then develop into increasingly complex patterns of interpersonal experience. Sullivan (1953a, 1953b) then proposed six developmental stages where these complex patterns of interpersonal experience were encoded and elaborated in memory through age-appropriate learning. This interpersonal learning of self-concept and social behaviours was based on an anxiety gradient associated with interpersonal situations. Sullivan theorized that all interpersonal situations range from highly secure (rewarding), through various degrees of anxiety,

finally ending in a class of situation that leads to such extreme anxiety that they are disassociated from experience. For Sullivan (1953b), and Pincus (2005b), the interpersonal situation is what leads to the formation, development, maintenance, and mutability of personality through the continuous interaction of interpersonal experience with the variations in satisfactions, security, and esteem. Over time this leads to the formation of "personifications," which are lasting conceptions of the self and others, as well as to enduring patterns of interpersonal relating (Pincus, 2005a).

To account for individual variation in learning Sullivan (1953a, 1953b) proposed that there is an interaction between the developing person's level of cognitive maturation (which Sullivan referred to as prototaxic, parataxic, and syntaxic modes of experience) and the unique characteristics of the interpersonal situations encountered. Therefore, according to Sullivan, interpersonal experiences are understood differently depending on the developing person's understanding of cause-and-effect logic and the use of consensual symbols such as language. It is this that affects the ultimate outcomes of interpersonal situations that characterize a human life (Pincus, 2005a).

Pincus and Ansell (2003) defined the concept of the interpersonal situation as "the experience of a pattern of relating self with other associated with varying levels of anxiety (or security) in which learning takes place that influences the development of self-concept and social behavior" (p. 210). Pincus (2005a) states that this is fundamental to the human experience and therefore can serve as a point of pantheoretical integration. Pincus continues to argue that dysfunctional conceptions of the self and others and maladaptive relational strategies which developed over the course of a lifetime of interpersonal situations intersect with Livesley's two core features of personality disorder:

chronic interpersonal dysfunction and problems with the self or identity. This leads Pincus (2005a) to conclude that interpersonal situations are also "central to the genesis, development, maintenance, and mutability of personality disorders" (p. 129).

Interpersonal Situations and the Mind

Pincus and Ansell (2003) note that a common misconception many people have is that the term "interpersonal" refers only to a limited class of phenomena that can only be seen in the immediate interaction between two or more people. In Pincus's CIIT :

The term *interpersonal* is meant to convey a sense of primacy, a set of fundamental phenomena important for personality development, structuralization, function, and pathology. It is not a geographic indicator of locale: It is not meant to generate a dichotomy between what is inside the person and what is outside the person. (p. 212)

This makes it very clear that Pincus believes that interpersonal functioning occurs not only between people but also inside people's minds through mental representations of the self and others. Pincus (2005b) argues that this allows the contemporary interpersonal perspective to incorporate important constructs from other theories into his theory. These constructs include internal working models, interpersonal schemas, and internalized object relations. Although CIIT theory does suggest that most important phenomena applicable to personality are relational in nature, it does not suggest that such phenomena are limited to observable behaviours.

Pincus and Ansell (2003) argue that interpersonal situations also occur in the mind in the form of perceptions of events that have occurred in the present, memories of past experiences (however accurate or distorted they may be), and in fantasies of future

experiences. Pincus (2005a) states that it is imperative that any theory of personality has the ability to address both internal experiences and external relationships, as Livesley's two core defining features of personality disorder have implications for both. Pincus (2005a, 2005b) argues that an individual's learned relational strategies and his/her conception of self and others are continuously influenced by both internal and external interpersonal situations.

Parataxic Distortions and Personality

Sullivan (1953b) found that occasionally a person's proximal relational behaviour was mediated by internal subjective interpersonal situations without the person being cognizant of it. Sullivan referred to this concept as a “parataxic distortion”. Pincus (2005a) states that parataxic distortions can affect interpersonal relations in several ways including the chronic distortion of new interpersonal experiences (effects input), the generation of rigid, extreme, and/or chronically maladaptive interpersonal behaviour (effects output), and the dominance of internal interpersonal situations and other self-regulation or affect goals leading to a disconnection between interpersonal input and output.

Pincus (2005b) suggests that pathological and normal personalities may differ in their enduring tendencies to organize interpersonal experience in particular ways. He proposes that healthy interpersonal relations are characterized by a person's capacity to elaborate and organize incoming interpersonal input in generally undistorted ways. This allows for the mutual needs of the self and the other to be met. So, in this case, the internal interpersonal field and the proximal interpersonal field are mostly the same (i.e., there is no parataxic distortion). Conversely, maladaptive interpersonal functioning

occurs when the proximal interpersonal field is encoded in a biased or distorted way. This, Pincus suggests, leads to behaviour (or output) that disrupts interpersonal relations due to disconnected or conflicting relational goals.

Motivation and Personality Development

In order to account for which situations are most influential, how their influence is manifested, and how interpersonal situations contribute to personality development throughout the lifespan, Pincus (2005a, 2005b) proposes two necessary conditions be present. The first is a “catalyst of internalization.” By this Pincus means a developmentally prominent motive must be activated, achieved, or frustrated or a trauma must affect the person. The second necessary condition is that the experience must involve “regulatory metagoals.” Finally, Pincus and Ansell (2003) theorize that the process by which interpersonal situations promote enduring influences on personality development is through the internalization and mental representation of reciprocal interpersonal patterns in relationships that are associated with particular motives and regulatory goals.

Catalysts of Internalization and Personality Formation

Pincus and Ansell (2003) state that reciprocal interpersonal patterns develop jointly with emerging motives that are developmentally salient. These developmentally emergent motives usually begin with the formation of early attachment bonds and the feeling of felt security, but later, things such as separation-individuation, the experience of self-esteem and positive affect, and the development of gender identity may take precedence. Even later, adult identity formation and its reinforcement from the social world, as well as the mastery of continuing unresolved conflicts, may take priority. As

well as the achievement of emerging developmental goals, influential interpersonal patterns are also associated with what Pincus (2005a) calls “traumatic learning.” These stem from the need for a person to cope with such events as the early loss of an attachment figure, childhood illness or injury, and physical, sexual, or emotional abuse. Pincus argues that when such experiences are internalized, the consequences are a person's consistently sought-after relational patterns and his or her strategies for achieving them. These then form the basis for the recurrent interpersonal situations that characterize an individual's life. Therefore, in order to understand an individual's current behavior, the developmental and traumatic catalysts that created the reciprocal interpersonal patterns must be identified.

Genetic and Biological Underpinnings of Personality Pathology

The role of genetic and biological influences in the development of normal personality, as well as in individual differences in personality, has been well established (Plomin & Caspi, 1999; Plomin, DeFries, Craig, & McGuffin, 2000; Plomin, DeFries, McLearn, & McGuffin, 2003). Even though the heritability estimates for dimensions or features of personality tend to be lower than those found for intelligence or other cognitive abilities, it can be safely said that genetic factors have an influential role in determining personality (Dilalla, 2004; Plomin & Caspi, 1999; Plomin et al., 2000; Plomin et al., 2003). The role of genetic and biological factors in the etiology of personality pathology, however, is much less clear. This does not mean that genetic and biological factors do not play a role in determining these disorders, but studies on the determination of both heritability and familiarity of personality disorders are just beginning to appear. For example, twin and adoption studies in this area are rare, and

familial aggregation work is progressing slowly (Livesly, Jang, & Vernon, 1998).

Research into the psychobiological underpinnings of personality pathology in terms of prominent central nervous system neurotransmitters and meaningful neurobehavioural circuitry remain in infancy (Coccaro, 2001; Depue & Lenzenweger, 2001, 2005). Due to the limited research in this area, Pincus (2005a, 2005b) has not yet accounted for genetic or biological factors on personality disorder into his model.

Regulatory Metagoals Role In Personality

In addition to the catalysts of internalization, Pincus (2005a, 2005b) also theorizes there is an additional level of interpersonal learning that takes place simultaneously with the catalysts. Pincus states that there is a second condition necessary for the internalization of interpersonal experience and that is the association of the interpersonal situation with one or more of three superordinate regulatory functions or metagoals: field regulation, emotion regulation, and self regulation. Developing mechanisms to achieve emotion regulation and self regulation are viewed as important in most personality theories, but interpersonal theory adds in the concept of field regulation. Field regulation is the processes by which the behaviour of the self and the other transactionally influence each other (Mitchell, 1988; Pincus 2005a, 2005b; Wiggins & Trobst, 1999). Pincus and Ansell (2003) argue that the same patterns of influence that occur in the proximal interaction of two people also occur in the internal interpersonal field of mental representations. Emerging developmental motives and the coping demands of traumas all have significant implications for emotion regulation, self regulation, and field regulation. Pincus (2005a) states that this further contributes to the generalization of interpersonal learning to new interpersonal situations by providing a

small number of superordinate psychological triggers to activate internal interpersonal situations.

Pincus (2005b) contends that it is important to distinguish these three regulatory metagoals in order to understand the shifting priorities that may be associated with interpersonal behaviour. To illustrate this point, Pincus states that at any given time the most important metagoal may be proximal field regulation. However, interpersonal behaviour may be associated with self regulation, such as the derogation of others to promote one's own self-esteem, or emotion regulation, such as the use of sexual availability in order to feel more emotionally secure and stable. In such cases interpersonal behaviour may play a key role, even if the priority is not explicitly field regulation. Pincus indicates that interpersonal behaviour enacted in order to meet the demands of self regulation or emotion regulation may reduce the contingencies associated with the behaviour of the other person. This, Pincus argues, is another pathway to parataxic distortion and helps account for the fluctuating symptomology of personality disorders.

The Internalization of Interpersonal Experience

Pincus (2005a) contends that interpersonal situations are most likely to be internalized, and thus have an enduring impact on personality, when they are linked with activation, achievement, or frustration of developmentally significant motives, or with traumas impinging on the individual. These catalysts of internalization are both associated with regulatory metagoals. Benjamin (1996, 2003, 2005) has postulated that there are three forms of internalization (which Benjamin refers to as interpersonal copy processes) that lead to enduring relational patterns and regulatory strategies. The first is

identification. It is defined as relating to others the way a significant other related to the self. The second is recapitulation, and it is defined as behaving toward others as though an internalized other is present and still in control. The last form is introjections, and it is defined as treating the self the way the self was treated by important others. Pincus (2005a, 2005b) has incorporated these three forms of internalization into his CIIT. From this he contends that an interpersonal situation can be composed of a proximal interpersonal field in which overt behaviour serves important regulatory and communicative functions, as well as an internal interpersonal field that leads to enduring individual differences in covert experience through the processing and elaboration of interpersonal input.

Definition of Personality Disorder

Pincus (2005a, 2005b) argues that the elaboration of interpersonal input may be healthy or maladaptive depending on the developmental history of the interpersonal situations characterizing a person's life. In normative social environments, generally accurate interpretations of interpersonal input from others may lead to adaptive relationship enhancing behaviours (output) and a positive, stable self-image. Serious distortions of interpersonal input, however, Pincus contends, may lead to both chronic interpersonal dysfunction and problems with self or identity—Livesley's core features of personality disorder.

Pincus (2005b) proposes that the key element distinguishing normal personality from disordered personality involves the capacity to enter into new proximal interpersonal situations without parataxic distortion. Pincus states that the larger the range of proximal interpersonal situations that can be entered into where the individual exhibits

anxiety-free functioning (little need for emotion regulation) while maintaining self esteem (little need for self regulation), the more adaptive the personality. Pincus (2005a) argues that when this occurs there is no need for the person to activate mediating interpersonal situations and the person can focus on the proximal situation, encode incoming interpersonal information without distortion, respond in adaptive ways that promote healthy interpersonal relations (meet the needs of the self and others), and establish complementary patterns of reciprocal behaviour by fully participating in the proximal interpersonal field. Pincus (2005b) argues that this adaptive interpersonal functioning is promoted in an environment, virtually devoid of trauma, that has allowed the individual to achieve most developmental milestones in normative ways. Pincus maintains that this leads to the full capacity to encode and elaborate incoming interpersonal input without bias from competing psychological needs.

When a person develops in a traumatic or nonnormative environment, however, Pincus (2005b) explains that significant nonnormative interpersonal learning around such basic motives as attachment, individuation, and gender identity may be internalized and associated with difficulties with self regulation, emotion regulation, and field regulation. In contrast to healthy personality, Pincus states that disordered personality is reflected in a large range of proximal interpersonal situations that elicit anxiety (activating emotion regulating mechanisms and strategies), threaten self-esteem (activating self regulating mechanisms and strategies), and lead to dysfunctional behaviours (nonnormative field regulation mechanisms and strategies). Pincus argues that when this occurs, internal interpersonal situations are activated and the person will be prone to exhibit various forms of parataxic distortion as his or her interpersonal learning history dictates.

Therefore, the perception of the proximal interpersonal situation is mediated by internal experience, incoming interpersonal information is distorted, behavioural responses disrupt interpersonal relations (the needs of the self and others are not met), and relationships tend toward maladaptive patterns of reciprocal behaviour. In the end, the person's current behaviour will exhibit relatively weak contingency with the proximal behaviour of the other (Pincus, 2005a).

Fluctuating Severity of Personality Disorder Symptomology

Livesley (2001) states that it is important for researchers and clinicians to avoid confusing the stability of personality with the stability of personality disorder symptomology. Livesley contends that many personality disorders exhibit fluctuating courses of acute symptomatic states, crises of all kinds, and overall level of functioning.

The CIIT (Pincus, 2005a, 2005b) accounts for this fluctuating severity in terms of interpersonal learning associated with developmentally salient motives and regulatory metagoals. Pincus sustains the notion that while the symptoms of personality disordered individuals fluctuate and they exhibit a transient capacity for adaptive functioning, when it becomes necessary for them to regulate their sense of self, their emotions, or the behaviour of others, an increase in the severity of their symptomology is likely to be seen. This, Pincus argues, is because such regulatory metagoals are likely to be associated with core motives and the internalized patterns of relating associated with their achievement or frustration. Moreover, Pincus suggests that when such metagoals and motives are evoked or thwarted, activation of internalized relations that guide perception of new input and expression of interpersonal behaviour dominate the individual's functioning (i.e., parataxic distortion). In healthy personalities, only a small number of interpersonal

situations require any significant regulatory effort, but in personality disordered people many more interpersonal situations appear to evoke anxiety and present a threat to the individual's self-esteem (Pincus, 2005a, 2005b).

An Interpersonal Definition of Personality Disorder

Pincus (2005a) argues that a personality disorder can be defined by the following:

A. In a large range of situations, the individual exhibits strongly internalized relational patterns associated with (i) activation, achievement, or frustration of salient developmental motives; (ii) traumatic learning; and (iii) regulatory metagoals. These internalized patterns pervade the self concept and perception of others (via schemas, self-talk, imagery, object relations, internal working models, etc.) leading to parataxic distortions that:

1. Interfere with accurate encoding of new interpersonal experiences (input).
2. Generate inflexible, extreme, and / or nonnormative interpersonal behavior leading to vicious circles, self-fulfilling prophecies, and maladaptive transaction cycles (output).
3. Reduce the contingency between the individual's behavior (output) and the behavior of others (input) or the normative situational press (input).

B. Such disturbances typically develop in a toxic social environment at odds with normative developmental experiences, leading to identification, recapitulation, and introjection of maladaptive self-, emotion-, and field-regulatory strategies that generate self-defeating and nonnormative interpersonal behavior.

C. Lack of insight is common and may be due to distortion of interpersonal input, dominance of internal field-regulation goals, or preoccupation with self-regulation

or emotion-regulation metagoals. (pp. 134-135).

The DSM and the Diagnosis of Personality Disorders

The Diagnostic and Statistical Manual of Mental Disorders (DSM) is the standard classification of mental disorders used by mental health professionals in North America. The most current version is the DSM-IV-TR (APA, 2000).

A Brief History of the DSM

Early clinicians in the fields of clinical psychology, psychiatry, and psychoanalysis focused their attention on pathological variations in human functioning. This included pathological personality functioning. Due to their efforts, the Diagnostic and Statistical Manual of Mental Disorders (DSM) was created in order to have a standardized way of diagnosing and classifying the various disorders that clinicians were seeing on a daily basis (Millon, 1995).

The first DSM, the DSM-I (APA, 1952) organized psychiatric disorders into four categories: (a) disturbances of pattern; (b) disturbances of traits; (c) disturbances of drive, control, and relationships; and (d) sociopathic disturbances. These categories were revised and expanded upon in DSM-II (APA, 1968), but no specific diagnosis of “personality disorder” existed in these first two versions of the DSM. Clinicians during this time, however, did make the diagnosis of “personality disorder” when the patient did not fit comfortably into any of the formally recognized diagnostic categories (Millon, 1995). It was not until the DSM-III (APA, 1980) that personality disorders defined on a separate axis, whether a symptomatic disorder was present or not, first appeared.

The DSM-III (APA, 1980) and its successors (DSM-III-R, DSM-IV, DSM-IV-TR) all use a multi-axial diagnostic system that makes a distinction between clinical

syndromes (Axis I) and personality disorders (Axis II). Lenzenweger and Clarkin (2005) argue that the introduction of a distinction between clinical syndromes and personality disorders, as well as an explicit description of personality pathology within the DSM-III (APA, 1980), led to an exceedingly active phase of personality disorder research. Researchers began efforts to clarify and validate the personality disorder constructs and sought to understand the relations between personality disorder and personality (Lenzenweger & Clarkin, 2005).

What this research has accomplished is to highlight some of the problems that accompany the benefits of the “atheoretical approach” the architects of the DSM-III (APA, 1980) and its subsequent successors espoused. Lenzenweger and Clarkin (2005) explain that the creators of the DSM-III “justifiably sought a diagnostic system that would provide explicit, usually behavioural, criteria that could be reliably assessed” (p. 6). Lenzenweger and Clarkin go on to argue, however, that the need for diagnostic reliability does not imply the need for an “atheoretical” approach to diagnosis. By adopting this atheoretical approach, rather than a more model-guided approach, the architects of the DSM-III and its successors have actually made it more difficult for researchers and clinicians to illuminate the etiology, pathogenesis, and developmental course of the personality disorders, as well as to classify and diagnose the disorders (Lenzenweger & Clarkin, 2005).

Problems with the DSM Classification Scheme for Personality Disorders

What the current DSM-IV-TR (APA, 2000) does is provide a structure for organizing personality pathology, namely the disorders of Axis II. The DSM-IV-TR presents 10 personality disorders grouped into three clusters, the odd-eccentric, the

impulsive-erratic, and the anxious-avoidant clusters. The problem is, given the atheoretical approach the DSM-IV-TR is based on, the Axis II arrangement may have little, if any, correspondence to the true, or natural, latent organization of personality disorder symptomology. Lenzenweger and Clarkin (2005), in their review, state that there have been no published data derived from a large sample (which they defined as $N > 1,300$, which assumes 10 subjects per Axis II diagnostic criterion) of carefully clinically assessed cases in which analyses were conducted at the level of individual items (the criterion level) that confirm the DSM-IV-TR cluster structure. In fact, Lenzenweger and Clarkin could find no studies with large samples that validated the disorder structures themselves. Lenzenweger and Clarkin did find some factor-analytic studies that broadly corresponded to the three clusters of the DSM-IV-TR Axis II taxonomy. These studies, however, analyzed data at the level of disorders which, Lenzenweger and Clarkin explain, means the data had already been structured *a priori* by being organized into 10 or 11 predefined disorders.

Some clinicians, using their accumulated clinical experience, have argued that the particular disorders defined in Axis II do not adequately match clinical reality. For example, Kernberg and Caligor (2005) argue that distinctions between hysterical and histrionic personality disorders have been neglected in Axis II, the existence of pathological masochism has only been variably recognized, and that clinically rich concepts related to the classic psychopathy construct have been given diminished attention in favour of the behaviourally defined antisocial personality disorder concept. Others have argued, such as Clark (1992), that the DSM Axis II criteria do not meet scientific standards. Clark suggests that the personality criteria are not optimally grouped

into disorders and do not accurately reflect trait dimensions.

The Issue of Comorbidity

When the personality disorders were separated into their own Axis in the DSM-III (APA, 1980) a new problem emerged: The co-occurrence of diagnoses, or comorbidity, of disorders on both Axis I and Axis II. The term “comorbidity” appeared in the psychological and psychiatric literature for the first time in 1984 (Lenzenweger & Clarkin, 2005). In 2006 an online database search using PsycINFO that tracked the keywords “comorbidity” and “personality disorder” resulted in over 1,000 citations, a testament to the fact that this is an area of very active discussion and research.

The comorbidity issue led writers to consider the possible meaning of why it occurs. They began to ask if it indicated the random co-occurrence of two independent disorders, or if it indicated the co-occurrence of different disorders sharing a common etiology or pathophysiology, or even if it indicated different disorders that have some sort of shared causal relationship between them (Caron & Rutter, 1991; Kendall & Clarkin, 1992; McGlashan et al., 2000; Widiger & Shea, 1991). Others argued that comorbidity may be nothing more than an artifact of a multiaxial diagnostic system that encourages multiple diagnoses (Frances, Widiger, & Fyer, 1990; Lenzenweger & Clarkin, 2005) or may arise due to sampling and recruitment procedures (Allison, 1993; Du Fort, Newman, & Bland, 1993; Kraemer, 1995; Rutter, 1994). These complicated issues have yet to be resolved, and the dialogue and research continue.

Axis II /axis II comorbidity. The first place where comorbidity becomes an issue for personality disorder diagnoses is the high degree of overlap that can be found among the current Axis II personality disorders themselves. This takes the form of both

correlations among symptom dimensions as well as rates of co-occurrence of categorical diagnoses (Korfine & Lenzenweger, 1991; Widiger et al., 1991).

The Collaborative Longitudinal Personality Disorders Study (McGlashan et al., 2000), a descriptive, longitudinal, repeated measures study of a large clinical sample, found that participants in the study met the diagnostic criteria for a mean of 1.4 additional personality disorder diagnoses. This is consistent with results reported in other studies. For example Oldham et al. (1995) found a mean of 1.8 additional personality disorder diagnoses, and Stuart et al. (1998) reported a mean of 1.7 additional DSM-III-R (APA, 1987) personality disorders.

Researchers have found significant co-occurrences among specific Axis II disorders as well. For example, paranoid personality disorder and schizoid personality disorder have been found to significantly co-occur with schizotypal personality disorder (McGlashan et al., 2000; Oldham et al., 1995; Stuart et al., 1998; Zanarini et al., 1998). All of those disorders make up the “odd-eccentric” cluster A in the DSM-IV-TR (APA, 2000). Antisocial personality disorder has been found to co-occur significantly with borderline personality disorder and obsessive-compulsive personality disorder but in opposite directions. Antisocial personality disorder has been found to be positively associated with borderline personality disorder and negatively associated with obsessive-compulsive personality disorder (Klein & Shih, 1998; McGlashan et al., 2000; Stuart et al., 1998). Both antisocial personality disorder and borderline personality disorder are in the DSM-IV-TR's cluster B, the dramatic and impulsive cluster. Obsessive-compulsive personality disorder, however, is in cluster C, which the DSM-IV-TR labels as the anxious cluster. Another of the cluster C disorders, dependent personality disorder, has

been found to be elevated in individuals with borderline personality disorder (McGlashan et al., 2000; Zanarini et al., 1998).

This demonstrates that there are not only associations between personality disorders in the same cluster but there is also a co-occurrence of personality disorders in different clusters, as is the case in the association between dependent personality disorder and borderline personality disorder. These results call into question the validity of the diagnostic categories and the constructs themselves.

Axis I/II co-occurrence. Comorbidity is even higher between Axis I and Axis II disorders. The Collaborative Longitudinal Personality Disorders Study (McGlashan et al., 2000) found the mean number of lifetime Axis I disorders diagnosed in people already diagnosed with an Axis II disorder to be 3.4. Borderline personality disorder and schizotypal personality disorder have been found to have the highest number of comorbid Axis I disorders, while the other personality disorders do not seem to differ from each other in the number of Axis I disorders associated with them (McGlashan et al., 2000). The highest rate of co-occurrences, and the most replicated finding in the Axis I/II comorbidity literature, is for the association between borderline personality disorder and drug and substance use disorders (Links, Heslegrave, Mitton, van Reekum, & Patrick, 1995; McGlashan et al., 2000; Morganstern, Langenbucher, Labouvie, & Miller, 1997; Rounsaville et al., 1998), between borderline personality disorder and posttraumatic stress disorder (McGlashan et al., 2000; Southwick, Yehuda, & Giller, 1993; Zanarini et al., 1998), and between avoidant personality disorder and social phobia (Alpert et al., 1997; McGlashan et al., 2000; Turner, Beidel, Borden, Stanley, & Jacob, 1991).

The fact that comorbidity is a major issue in the diagnosis, treatment, and research

into personality disorders is beyond dispute. What is still being debated is what this comorbidity means. Regardless of its meaning, however, comorbidity must be taken into consideration when dealing with the personality disorders as they are diagnosed under the current DSM-IV-TR criteria.

Sex Bias in the Diagnosis of Personality Disorders

Another major issue that has received a lot of interest from investigators over the past 20 years is sex bias in the diagnosis of personality disorders. Kaplan (1983), citing higher rates of histrionic, borderline, and dependent personality disorders in women, made the famous claim that the diagnostic criteria for the personality disorders were gender biased. Other writers immediately responded that more men, however, are diagnosed with antisocial, and possibly obsessive-compulsive, paranoid, schizotypal, and schizoid personality disorders (Kass, Spitzer & Williams, 1983; Widiger, 1998). More important, they argued that differential prevalence is not sufficient evidence of bias. Widiger, in particular, argued that personality disorders may be considered as maladaptive traits that are not proportionately or normally distributed between the sexes, or even throughout the general population. Widiger went on to state that more women present for treatment, which introduces a self-selection, or sampling, bias. In addition, bias may occur in the diagnostic criteria (criterion bias), or there may be bias on the part of clinicians (assessment bias). This makes it imperative that each of the potential sources of variability is considered when examining the differential prevalence and sex bias in the diagnosis of personality disorders (Widiger, 1998; Widiger & Spitzer, 1991).

One area that has been investigated is whether clinicians assign different personality disorder diagnoses based on the sex of the client, which would indicate sex

bias on the part of clinicians. The most popular method used to research this is to manipulate the patient's sex in their case histories while leaving all the other information unchanged. In studies of this type, it has been found that men were overdiagnosed with antisocial personality disorder, while women were overdiagnosed with histrionic and borderline personality disorders (Becker & Lamb, 1994; Ford & Widiger, 1989; Hamilton, Rothbart, & Dawes, 1986). These findings have been interpreted as evidence of assessment bias on the part of clinicians (Crosby & Sprock, 2004).

To account for this bias, writers have proposed that the personality disorders, as currently conceptualized, are associated with masculine or feminine sex role stereotypes and that this makes clinicians more likely to assign a diagnosis when the symptoms are consistent with the client's sex. As a result, clinicians overdiagnose men with antisocial personality disorder and overdiagnose women with histrionic personality disorder (Landrine, 1989; Rienzi, Forquera, & Hitchcock, 1995; Rienzi & Scrams, 1991; Sprock, Blashfield, & Smith, 1990).

Sprock et al. (1990) found that undergraduates viewed the criteria for certain disorders as prototypically male or prototypically female. For example, the undergraduates in Sprock et al.'s study viewed the diagnostic criteria for antisocial personality disorder as prototypically male and the diagnostic criteria for dependent and histrionic personality disorders as prototypically female. Sprock et al. referred to this as evidence of "gender weightings" within the criteria.

Sprock (1996) suggested that the gender weightings of the disorders may lead to the same symptoms being perceived differently when displayed by men versus when displayed by women. This, Sprock argued, may account for the different diagnoses

assigned to male and female versions of cases in the vignette studies. To test her hypothesis, Sprock, in her seminal study, asked undergraduates to rate the abnormality of the personality disorder criteria for men and for women. Sprock found that antisocial and narcissistic criteria were rated more abnormal for women (the gender weightings of the criteria – in this case, masculine – were inconsistent with the person's gender – in this case, female) than for men. When compared with a sex-unspecified condition, Sprock further found that antisocial and narcissistic criteria were rated less abnormal for men (which Sprock termed an “underpathologizing bias”) whereas the ratings for women were not significantly different. These results supported the notion that there is a differential perception of personality disorder symptoms based on their gender weightings and the patient's sex.

Furthering this, Crosby and Sprock (2004), in a study done to assess the process by which patient sex and characteristics of clinicians may contribute to bias in personality disorder diagnoses, found that there was a pattern of overdiagnosis of sex role consistent disorders and an underdiagnosis of sex role inconsistent disorders. The bias was found to most likely occur when the patient's sex was inconsistent with the gender weightings of the symptoms (e.g., female patient with symptoms of a masculine-weighted disorder). These findings are extremely important when considering females who display various forms of antisocial behaviours.

All of these problems with the DSM-IV-TR's (APA, 2000) current conceptualization of personality disorders serve to illustrate the point that just because females who exhibit antisocial behaviours, relational aggression in particular, are not diagnosed with a personality disorder does not mean that they do not possess underlying

personality pathology. It just means that the current, limited diagnostic categories and criteria present in the DSM-IV-TR (APA, 2000) are not able to adequately diagnose it.

Antisocial Behaviours in Females

Over the past several years there has been an increasing concern over how young girls are growing up. This concern is reflected in the empirical research being conducted on the negative trajectories of females (e.g., Cote et al., 2001; Moffitt et al., 2001) as well as in the media attention they have been receiving. The latter has largely been fueled by dramatic and tragic events that have involved adolescent girls, such as the brutal death of Reena Virk (Tafler, 1998). Teachers, juvenile justice workers, and mental health professionals who work with these troubled girls argue that the risk factors, characteristics, and outcomes for disruptive behaviours may differ in girls and boys (Chamberlain & Reid, 1994). Therefore a better understanding of the sex differences in antisocial behaviour should be a priority, especially as they relate to their interpersonal relationships.

Conduct Disorder

Regardless of age, conduct disorder is diagnosed significantly more often in males than in females (Cohen et al., 1993; McGee, Silva, & Williams, 1984; Offord, Boyle, & Racine, 1991). For over a decade, however, there has been a debate around the application of the current DSM criteria for conduct disorder for girls. Zoccolillo (1993) has argued that the DSM-IV-TR (APA, 2000) criteria for conduct disorder are gender biased as they are weighed heavily in favour of physically aggressive behaviours and these behaviours are not typical of girls' conduct problems (e.g., running away, lying, stealing, etc.). Zoccolillo contends that behaviours that were considered pathological in

females would be considered normal in males. Due to these biases, he proposed changing the criteria for conduct disorder by de-emphasising serious physical aggression as a key diagnostic criterion so that girls' problem behaviours could be more easily identified as such. Zahn-Waxler (1993) and others (Doyle et al., 2003; Moffitt et al., 2001) disagreed, saying that changing the criteria for conduct disorder is unnecessary and would result in the inclusion of individuals who do not fit the same pattern of impairment over the life course as others. Zahn-Waxler instead argued for broadening the criteria to include behaviours that are commonly observed in girls with conduct problems, such as "relational" or "social aggression" (Underwood, 2003). Others, however, such as Moffitt et al. (2001), do not support this idea. Moffitt et al. argue, based on their work on sex differences in the development of antisocial behaviour in their large longitudinal study, that there is no evidence there are different patterns of symptoms of conduct disorder for boys and girls.

Anxiety, depression, substance dependence, and attention deficit hyperactivity disorder (ADHD) have been found to be comorbid with conduct disorder in both boys and girls. Loeber and Keenan (1994) and Keenan, Loeber and Green (1999), in their comprehensive reviews of the sex differences in psychiatric comorbidity of conduct disorder, found that prior oppositional defiant disorder (ODD) was common to both sexes but that depression was comorbid with conduct disorder (CD) more often in females than males. There is also some recent research which found evidence for greater continuity of psychiatric disorder in girls than boys, aged 9-16, and specifically, found depression was comorbid with CD in girls but not boys when other types of comorbidity were controlled (E.J. Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). Interpersonal impairments,

primarily social isolation, withdrawal, and lack of peer support have been demonstrated to be consistently associated with childhood depression (Renouf & Harter, 1990; Renouf, Kovacs, & Mukerji, 1997).

Therefore, even though peer rejection is associated with CD in both girls and boys (Quinton, Pickles, Maughan, & Rutter, 1993), girls may bring to the expression of this disorder a different pattern of disrupted interpersonal relationships consistent with depression and distinct from those in boys. The overlap of depression and conduct disorder in girls is of particular interest given the consistent correlation of internalizing and externalizing syndromes, and the timing of the two disorders (Leadbeater, Blatt, & Quinlan, 1995; Somersalo, Solantaus, & Almquist, 1999). This issue has implications for a relational explanation of the sex differences in antisocial behaviours, which will be explored later in this chapter.

Sex Differences in the Etiology of Antisocial Behaviours

A number of different mechanisms have been implicated to account for sex differences in the etiology of antisocial behaviours. They include gender socialization, parenting, neglect and abuse, pubertal changes, peer groups, and prior mental health problems.

Gender Socialization and Antisocial Behaviour

Many studies (see Keenan & Shaw, 1997 for a review) have found support for gender socialization as a mechanism for sex differences in antisocial behaviours. Sex differences in aggression tend to emerge around ages 4 or 5. Also at this age boys and girls tend to segregate by sex, thereby limiting girls' exposure to the use of physical aggression while increasing boys' (see Keenan & Shaw, 1997). Keenan and Shaw's

review of observationally measured childhood aggression generated moderate support for their hypothesis that socialization efforts by parents, peers, and teachers influence the development of girls' psychopathology by channelling early problems into primarily internalizing problems. Keenan and Shaw also found moderate support for their claim that changes in girls' rates of problem behaviour, compared to boys', may be attributed to adaptive skills that facilitate the development of prosocial behaviour. Several studies further suggest that elevated levels of gender atypical behaviour, such as unhelpfulness toward others (Cote, Tremblay, Nagin, Zoccolillo, & Vitaro, 2002) and callous-unemotional traits (Frick et al., 2003), may, when in combination with other risks, increase the vulnerability to conduct problems among girls more than in boys. These studies suggest that failures in gender socialization among girls may interact with other vulnerabilities, such as poor parenting or hyperactivity, to increase the risk for antisocial behaviours. More research is required, however, to further test this hypothesis.

The Role of Parenting in Antisocial Behaviour

Studies have found that low parental involvement and supervision are key predictors of antisocial behaviours in boys (Loeber & Stouthamer-Loeber, 1986; Wasserman & Seracini, 2000), but very few similar types of studies have been conducted on girls. Even fewer have had large enough samples of high-risk males and females to allow for the testing of sex differences and sex-by-age interactions (although quite a few are now underway in a number of countries). One study which is large enough to allow for this kind of analysis is the Dunedin longitudinal study (Moffit et al., 2001). For this large birth cohort the investigators reported no sex differences in the predictive value of parental involvement, supervision, and harsh punishment for antisocial behaviours.

Another longitudinal study of a representative sample of boys and girls in upstate New York, however, found that power assertive punishment strategies accounted for as much as 50% of the variance in both sexes' behaviour problems, even after accounting for earlier behaviour problems (Cohen & Brooks, 1995). These punishment strategies for controlling and disciplining children involve scolding, physical punishment, and the threatened or actual removal of privileges.

Studies (Chamberlain & Moore, 2002; Henggeler, Edwards, & Borduin, 1987; Leve & Chamberlain, 2005) conducted on clinical samples that have investigated additional dimensions of parenting have, however, found sex differences. Among girls and boys in one community treatment study for juvenile delinquents, girls averaged a rate of out-of-home placements almost three times that of boys (Chamberlain & Moore, 2002), and multiple transitions in parental figures accounted for a higher proportion of the variance in delinquency scores in girls than in boys (Leve & Chamberlain, 2005). In another treatment study of juvenile delinquents, conflict with parents was higher in families of female than male juvenile delinquents (Henggeler et al., 1987).

Other research suggests that the content of parent-child conflict may relate to girls' interpersonal relationships with boys. Sociological research has found that conflicts between adolescent girls and their parents are more likely than those with sons to centre on parental control of girls' behaviour with opposite sex peers, primarily to protect girls from sexual exploitation and pregnancy (Hagan, Simpson, & Gillis, 1987). Furthermore, research on parent-child conflict suggests that the level of emotional involvement and interdependency in mother-daughter relationships results in greater levels of intensity during conflict and in greater levels of emotional distress in girls compared to boys

(Gore, Aseltine, & Colten, 1993; Noller, 1994).

Thus, even though boys and girls who exhibit antisocial behaviours tend to be poorly supervised, punished harshly, and rejected by their parents, there is some evidence that the content of these conflicts for girls may relate more specifically to their opposite-sex relationships and that the higher levels of emotional engagement in mother-daughter relationships may result in more distressing and intense conflicts.

Neglect and Abuse and Antisocial Behaviour

Surprisingly research on sex differences in abuse and neglect as risks for antisocial behaviours has produced conflicting results. Two reviews of the effects of sexual abuse on children found no sex differences in the adjustment of males and females (Kendall-Tackett, Williams, & Finkelhor, 1993; Rind, Tromovitch, & Bauserman, 1998). More recent studies also find that abuse predicts criminal offending in both female and male juveniles, even after the effects of out-of-home placements have been considered (Cohen, Smailes & Brown, 2000; Moffitt et al., 2001) and that the effects of abuse are not mediated by running away from home (Kaufman & Widom, 1999).

Research also suggests that the severity, rather than the prevalence, of child abuse may differ for the two sexes. Two studies done on juvenile delinquents suggest that female delinquents are more likely than males to have multiple experiences of sexual abuse, even though the ratio of delinquent females to males who have been sexually abused is similar to that observed in the general population (Chamberlain & Moore, 2002; Swanston et al., 2003). Others suggest that girls' sexual abuse tends to start earlier, to last longer, and to be perpetrated by a family member (see Hunter, 2006 for a review). Therefore, while it is likely that child abuse itself may not differentiate girls and boys

with antisocial behaviours, it is possible that a history of prolonged sexual abuse within the family may put girls at greater risk for developing them than boys.

Pubertal Changes and the Development of Antisocial Behaviours

Moffitt et al. (2001) found that either the early or late onset of puberty has only a small effect on the risk for antisocial behaviours in males. In contrast, however, several longitudinal studies indicate that pubertal changes likely play an important role in the development of antisocial behaviours in girls. R. G. Simmons and Blyth (1987) found that early maturing girls had more conduct problems in school, lower academic achievement, and more body image disturbances. Stattin and Magnusson (1990) followed an epidemiological sample of Swedish girls and found that the early onset of menarche predicted norm violation and sexually precocious behaviour. Caspi and Moffitt (1991) found that the early onset of menarche in girls in an epidemiological study in New Zealand adolescents predicted juvenile delinquency.

The most enlightening finding in this area, however, comes from Caspi, Lynam, Moffitt, and Silva (1993), who found that girls' responses to the social and biological effects of early onset menarche on antisocial behaviours depended on the context in which they occurred. Specifically, the effect of early menarche on norm violation, familiarity with delinquent peers, and self-reported delinquency was found only for girls enrolled in mixed-sex schools, not for girls in all-girls schools (Caspi et al., 1993). These effects could not be explained by differential selection into schools. Delinquent behaviour was also found to be more stable among girls attending mixed-sex schools than all-girls schools (Caspi et al., 1993). Analyses of girls in mixed-sex schools revealed that, in girls without a history of earlier behaviour problems, the effect of early maturation was

mediated by their familiarity with delinquent peers. By way of contrast, for girls in mixed-sex schools who already had a history of early onset behaviour problems, the effect of early maturation was direct, not mediated by their familiarity with delinquent peers (Caspi et al., 1993). From these findings the investigators concluded that puberty and boys are required for the initiation and maintenance of delinquency in girls and that different pathways to antisocial behaviours may exist in girls with and without a history of behaviour problems.

Caspi et al. (1993) contended that puberty may signal to others in the social environment that a girl is entering a new level of readiness for certain types of experiences. These early maturing girls may attract older delinquent boys, while older nondelinquent boys are more attracted to nondelinquent girls at their own level of maturity. From these findings it appears that the availability of older, norm-violating male peers who model such behaviour seems essential to early maturing girls' delinquency. If a girl already has a history of early behavioural or emotional problems, however, the stress of early maturity may result in a magnification of existing behaviour problems.

Antisocial Behaviours and Peer Groups

Over the last 15 years research into the contribution of peer networks to the etiology and maintenance of antisocial behaviours in boys has led to much advancement in our understanding of these processes (Bjerregaard & Smith, 1993; Dishion, Andrews, & Crosby, 1995; Ennett & Baumann, 1994). Much less, however, is known about the role of girls' peer networks on their antisocial behaviours. Conduct disorder in adolescence is associated with more deviant peer groups for both males and females (Moffitt et al.,

2001; Quinton et al., 1993). One study found that the deviance of later maturing Swedish teenage girls was accounted for by affiliation with older peers (Magnusson, 1988).

Surprisingly, whether the sex of these older peers is important has not yet been determined. To date there have not been any studies conducted that investigated whether females who exhibited antisocial behaviours have more opposite-sex friends in their peer networks (either romantic or nonromantic partners) than nondeviant females. The study conducted by Caspi et al. (1993) on puberty in mixed versus same-sex schools does provide some support for this notion however.

Cairns, Cairns, Neckerman, Gest, and Garipey (1988) identified age or developmental stage as a key consideration in examining peer relations for antisocial behaviour in girls. For example, in fourth grade, girls identified as aggressive by teachers and peers did not tend to affiliate differentially with other aggressive girls, nor were their best friends necessarily aggressive. In contrast, aggressive boys in the fourth grade were already affiliating with other aggressive boys, and their best friends tended to be aggressive. By the seventh grade (early adolescence), however, it was found that aggressive girls were affiliating with other aggressive girls, and their best friends tended to be aggressive as well. Moffitt (1993) and Zoccolillo (1993) reported similar findings to Cairns et al. (1988). This is interesting, as antisocial behaviours tend to first appear in adolescence in girls.

Another issue which researchers have attempted to address is if there are sex differences in the level of influence exercised by the peer groups of males and females on antisocial behaviours. There is actually very little research in this area, but one study did find that adolescent girls, both delinquent and nondelinquent, report less use of influence

by their peer group than adolescent boys (Giordano, Cernkovich, & Pugh, 1986). Investigators have also found boys' antisocial acts, including physical aggression, are mostly directed against strangers and are typically committed in a larger peer group format, while girls' aggression tends to occur most often between themselves and a family member (Pepler & Craig, 1999), while antisocial acts are usually committed in same-sex pairs (Bottcher, 2001; Chamberlain & Reid, 1998). Furthermore, mixed-sex peer groups probably influence females' willingness to engage in antisocial behaviour, even if the acts themselves are committed in a sex-specific format.

The Role of Prior Mental Health Problems on the Etiology of Antisocial Behaviours

Longitudinal prospective studies of representative samples generally find that the behavioural risks, for example hyperactivity, for the onset of antisocial behaviour are similar for males and females, but that boys are exposed to more of these risks (Moffitt et al., 2001). Rowe, Maughan, Pickles, Costello, and Angold (2002) analyzed information provided by four waves of data from the Great Smoky Mountains Study. Based in a predominantly rural area of the southeastern United States, the Great Smoky Mountains Study was a longitudinal study of psychiatric disturbances in a community sample of children and adolescents aged 9-16. The study used an accelerated cohort, two-phase sampling design. Initially, using a household equal probability method, 4,500 nine-, eleven-, and thirteen-year-old potential participants were selected. During the screening phase a parent filled out the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983), which measures behavioural disorders in children and adolescents. The next phase, the interview phase, included all the participants who scored above a predetermined cutoff on the CBCL, which identified the 25% most pathological members

of the sample along with a 10% random sample of the remaining potential participants. The interviews were conducted annually in four waves. During each wave the child and primary caregiver were separately interviewed using the Child and Adolescent Psychiatric Assessment (CAPA; Angold & Costello, 2000). The CAPA assessed the child's or adolescent's psychiatric status over the preceding 3 months using DSM-IV (APA, 1994) criteria. The CAPA also includes a wide range of measures assessing family and environmental correlates of disorder. Between 80% and 94% of those selected took part at each of the four annual interviews, providing a robust data set containing 4,965 observations from 1,420 participants (790 boys, 630 girls).

For the current study (Rowe et al., 2002) data from the CAPA were used to create three exclusive diagnostic groups: A no-diagnosis group that did not qualify for a diagnosis of CD or ODD, an ODD group, and a CD group. Each diagnostic group was treated as a categorical predictor in all cross-sectional analyses. Associations between diagnostic group and sex and the relationships between an ODD diagnosis at wave 1 and outcome disorders at later waves were assessed using logistic regression.

Rowe et al. (2002) found that males had a weighed prevalence of 2% and females had a weighed prevalence of 1.5% for ODD. Furthermore, males had a weighed prevalence of 3.1% for CD, while females had a weighed prevalence of only 1.1%, a significant difference. The great majority of boys with CD also exhibited oppositional behaviours, with only 5% having no oppositional symptoms and 26% meeting the full criteria for ODD. Among females, the association was even stronger with 54% of the girls diagnosed with CD also meeting the full criteria for an ODD diagnosis and only 2% exhibiting no oppositional behaviours at all. Rowe et al. went on to evaluate ODD to CD

progression over the course of the 4-year study. They found that almost a third of the males diagnosed with ODD at wave 1 did not qualify for any additional DSM-IV (APA, 1994) diagnosis over the following 3 years while just over 40% received a diagnosis of CD. For the females however, no female diagnosed with ODD at wave 1 went on to develop CD. On the basis of these findings Rowe et al. concluded ODD was a strong risk factor for the development of CD in boys but that ODD provided no increased risk for CD among girls. In a subsequent investigation the same research team found evidence that depression is a significant predictor of conduct disorder in girls but not in boys (E.J. Costello et al., 2003).

It was demonstrated earlier in this chapter that depression was more likely to co-occur in girls than in boys who demonstrate antisocial behaviour. This is interesting, as for boys depression is often conceptualized as an outcome of externalizing behaviour, or at least as an outcome of other risks for externalizing disorders. Loeber and Keenan (1994), for instance, suggest that disruptive behaviour disorders result in impaired family interaction styles, peer difficulties, and academic problems, all of which may lead to depression in adolescence. Patterson and Stoolmiller (1991) suggest a similar model, where academic failure and peer rejection may lead to a depressed mood later in adolescence. Yet, several studies suggest that depression is a stronger *predictor* of antisocial behaviours in girls than in boys (Kovacs, 1996; Renouf & Harter, 1990).

Evidence this chapter has already presented suggests that while child abuse increases the risk for antisocial behaviours in girls and boys, girls are more likely to experience sexual abuse at an earlier age and for more sustained periods of time (see Hunter, 2006 for a review). Further evidence also indicates that chronic or protracted

sexual abuse may be a risk factor for the early onset of puberty in girls (Romans, Martin, Gendall, & Herbison, 2002; Trickett & Putnam, 1993). Subsequently, evidence has already been presented that early pubertal onset is a risk factor for antisocial behaviours in girls but that it has little or no effect on the risk for antisocial behaviours in boys. Furthermore, research from several longitudinal studies suggests that sex differences in depression emerge between the ages of 13 and 15, and the greatest difference in both overall rates and new cases is between the ages of 15 and 18 (Hankin et al., 1998; Nolen-Hoeksma, 1994).

The onset of depression is linked to puberty and its associated hormonal, rather than social, changes. Cohen et al. (1993) conducted an epidemiological study of disorders in late childhood and adolescence in two counties in upstate New York. The study employed a multistage random sampling procedure with complete enumeration which resulted in 975 families with children in the 1-10 age range being selected to participate. The original sample was recruited in 1975 (see Kogan, Smith, & Jenkins, 1977, for a complete description of the original study). Eight years later, 84% of the original sample was located for follow-up interviews with the children, who were then 9-18 years old, and their mothers. Beginning 2 years and 4 months later a third round of interviews was conducted on all but 39 of the participants interviewed in 1983. These interviews were conducted by different interviewers from the previous interviews, and the interviewers were blind to any previous diagnoses.

Interviews were conducted using the Diagnostic Interview Schedule for Children (DISC-1; A. J. Costello, Edelbrock, Dulcan, Kalas & Klaric, 1984). The DISC-1 measured diagnoses meeting criteria established in the DSM-III-R (APA, 1987). As

Cohen et al. (1993) used multiple informants to determine a diagnosis, they created a scale for each Axis I syndrome based on all the relevant items in order to improve the construct validity of the diagnoses. Children who met the diagnostic criteria and who also had scale scores one or two standard deviations above the population mean were given “moderate” and “severe” diagnoses respectively. The concurrent diagnosis of another disorder was not used as an exclusionary criterion for any diagnosis.

Cohen et al. (1993) then pooled their interview data collected from the two waves. This was done to produce more stable estimates of prevalence. Differences in prevalence were assessed using logistic regression analyses using gender, linear, and quadratic components of age, and their interactions as dependent variables. Cohen et al. found that, in girls, there was a significant rise in the prevalence of depression in the immediate postpuberty years, while the peak prevalence age for conduct disorder occurred about 2 years after the peak prevalence age for childhood depression. By way of comparison, the depression rates in boys remained low and stable from late childhood through adolescence, and the prevalence of conduct disorder peaked around age 10 and then declined. From these findings, Cohen et al. concluded that the prevalence curve of depression in girls suggests a triggering role of hormonal or pubertal changes. In contrast, the investigators stated that, since the peak for conduct disorder in girls appeared 2 or 3 years after menarche, on average, this disorder appeared to be related to social rather than hormonal changes. Angold, Costello, Erkanli, and Worthman (1999) found in the Great Smoky Mountains Study that the emergence of the higher female to male depression ratio appears to be associated with changes in androgen and estrogen levels rather than the morphological changes of puberty. Previously the same research team had also found that

pubertal status, rather than pubertal timing, predicts higher rates of depression in girls relative to boys (Angold, Costello, & Worthman, 1998).

So it appears that hormonal changes associated with puberty may increase girls' risk of depression, and depression may interact with family and environmental risks (such as low gender socialization, harsh parenting, availability of older, deviant male peers) in a transactional fashion to increase the risk for antisocial behaviours. In support of this, Obeidallah and Earls (1999) hypothesized that, in impoverished urban girls, depression acts as a risk for delinquency by decreasing girls' concern about their own personal safety, by withdrawing them from prosocial activities and weakening their attachments to social institutions that tend to constrain norm violation, and by causing them to be rejected by their normative peers which leads to a subsequent association with a deviant peer group. Obeidallah and Earls's study found that, in high risk urban environments, girls between the ages of 12 and 15 who were depressed reported engaging in more crimes against other persons and higher levels of aggressive behaviour than nondepressed girls. Of course the other possibility is that depression may simply be a marker of physiological pubertal changes that increase the risk of girls' engaging in antisocial behaviours.

Developmental Course of Females' Antisocial Behaviours

The following section details the evidence that has been accumulating suggesting that females' antisocial behaviours may not follow as different a developmental course from males' antisocial behaviours as was once thought.

Age of Onset and Persistence of Antisocial Behaviours

Cohen et al. (1993) found, while examining a broad age range from 10 to 20

years, the rate of conduct disorder depended on the age at which it was assessed. That is, for children aged 10-13 years, the prevalence rate per 100 youths was 3.8 for girls and 16.0 for boys, but at ages 14-16 the prevalence was 9.2 for girls and 15.8 for boys. The rate of conduct disorder peaked for boys around age 10 but peaked for girls around age 16. Also, the rate of conduct disorder declined steadily for boys after age 10 while for girls the growth curve rose steadily until age 16 and dropped sharply thereafter (Cohen et al., 1993).

Numerous studies (Junger-Tas, Terlouw, & Klein, 1994; Moffitt, 1994; Moffitt et al., 2001; D. J. Smith, 1995) have demonstrated that for both sexes antisocial behaviour tends to peak in adolescence and desist in adulthood. Adolescence is a period of rapid transition during which youth are not fully tied either to the family of origin or to their own families with adult partners (Sampson & Laub, 1993). Once this developmental period is traversed most males and females seem to decrease their involvement in crime, physical aggression, and oppositional behaviour. There is even some evidence from the United States that delinquency case rates decline more quickly after age 16 among females compared to males (Puzzanchera et al., 2000). Despite this there is a body of accumulating evidence that suggests a small group of males exhibits an early onset, life course persistent pattern of conduct disorder in childhood followed by antisocial personality disorder in adulthood (Cohen et al., 1993; Lynam, 1996; Moffitt, 1994). Converging evidence also suggests that the distinction of early onset (which is defined as occurring before the age of 11) versus adolescent-limited conduct disorder observed in males does not apply to females, given the near absence of early onset CD among girls (Cohen et al., 1993; Moffitt et al., 2001; Silverthorn & Frick, 1999). There is one

exception to this however. Cote et al. (2001) found that, based on gender-specific cutoffs for behaviour problems, a group of behaviourally deviant girls showed an early onset trajectory of CD.

Although the specific behaviours included in the conduct disorder diagnosis onset in approximately the same chronological order for males and females (Robins, 1986), males are five times more likely to develop antisocial personality disorder in adulthood (Kessler et al., 1994; Robins & Rieger, 1991). The mental health outcomes for females, however, are much more varied and pervasive (Zoccolillo, 1992). A recent study (Olsson, Hansson, & Cederblad, 2006) that followed up 172 male and 118 female adolescents clinically diagnosed with CD into adulthood found that the females had significantly more somatization, anxiety, depression, and obsessive-compulsive symptoms than males.

What researchers are beginning to realize is that interpersonal relationships may account in several ways for the greater desistance of conduct disorder *per se* for females than males. For one thing females who exhibit antisocial behaviours are at risk for early child pregnancy and child bearing (Olsson et al., 2006). This may result in decreased opportunities for criminal behaviour, or strengthening of social bonds with children may inhibit their willingness to engage in antisocial behaviour. In support of this, females have been found to generally decrease delinquent activity (for example desistance from gang membership) immediately after the birth of a child, whereas males do so less and more slowly (Chesney-Lind & Shelden, 1992; Hagedorn, 1998; Stouthamer-Loeber & Wei, 1998). Second, young females who exhibit antisocial behaviours are less likely than antisocial males to enter correctional facilities, thereby reducing their exposure to seriously antisocial peers (Mumola, 2000).

Originally researchers believed that females were more likely than males to “grow out” of antisocial behaviours. Only recently have they begun to reexamine this idea, looking at appropriate developmental outcomes by sex. Outcomes such as depression, anxiety, early pregnancy and childbearing, marital discord, and poor parenting of the next generation are all significantly elevated in females who were diagnosed with CD as children or adolescents (Bardone, Moffitt, Caspi, Dickson, & Silva, 1996; Olsson et al., 2006; Woodward & Fergusson, 1999). Zoccolillo (1992) found that up to three quarters of women with conduct disorder that persists into adulthood (either antisocial personality disorder or substance use disorder) will develop an internalizing disorder. More recently Moffitt et al. (2001) found evidence that depression was an important sex-specific outcome of antisocial behaviour for girls.

Personality Disorder Features: Borderline Versus Antisocial

Antisocial personality disorder (ASPD) is much less likely as an outcome of antisocial behaviours in females compared to males (Robins, 1986; Zoccolillo, 1992). This is not surprising considering that the DSM-IV (APA, 1994) requires that an individual qualify for a diagnosis of conduct disorder *prior* to age 15, while the peak age of onset for conduct disorder in girls is 16 (Cohen et al., 1993). Also, ASPD requires the absence of a long-term relationship with a partner (DSM-IV-TR, APA, 2000) and does not take into consideration the more common pattern of highly unstable, but long-term relationships that antisocial females tend to engage in.

Borderline personality disorder (BPD), which is more common in women, shares antisocial features with ASPD and may be more strongly associated with conduct problems in females than in males. BPD is characterized by unstable interpersonal

relationships, impulsivity, and affective dysregulation (DSM-IV-TR, APA, 2000). The children of mothers with borderline personality disorder have been found to have elevated rates of impulse control disorders (Weiss et al., 1996). Also, the mothers of boys with severe behaviour problems have been found to display behavioural traits consistent with BPD, including sensation seeking (Frick, Kuper, Silverthorn, & Cotter, 1995), antisocial, and histrionic behaviours (Lahey, Russo, Walker, & Piacentini, 1989). This fits in very well with the clinical research on the use of inconsistently applied, harsh discipline, and emotional rejection observed in mothers of boys diagnosed with conduct disorder (Ehrensaft, Wasserman, et al., 2003; Wasserman, Miller, Pinner, & Jaramillo, 1996). Thus, it appears that females with a history of engaging in antisocial behaviours may express their antisocial tendencies in more dramatic, unstable interpersonal interactions as opposed to in the unattached, avoidant style observed in antisocial males.

In their review on comorbidity and ASPD Zanarini and Gunderson (1997) noted that patients with BPD often meet the criteria for, or exhibit traits of, comorbid antisocial personality disorder. Although the two disorders are distinct, there is considerable overlap in family psychopathology, disorder course, and basic underlying temperament. The reviewers went on to state that individuals with ASPD are distrustful, distant, and dominant, while those with BPD are intensely involved, dependent, and volatile. This observation, however, belies an inherent sex difference in interpersonal interactions and may explain why females with a history of engaging in antisocial behaviours are rarely diagnosed with ASPD as adults. In fact, Zanarini and Gunderson found three areas that were equally common in both types of personality disorder patients: sexual deviance (including, but not limited to, promiscuity), other impulsive patterns (not including

sexuality, substance abuse, self-mutilation or suicidal tendencies), and interpersonal problems with devaluation, manipulation, or sadism. The researchers also found that in childhood/adolescence the patients with BPD experienced underachievement, running away from home, and lying as often as the ASPD group.

Very few studies have examined sex differences in the association of antisocial behaviours, ASPD, and other types of personality disorder. Eppright, Kashani, Robison, and Reid (1993) found higher rates of BPD in female (48%) than male (22%) incarcerated juvenile offenders. The fact that BPD was found more often in female than male offenders is not surprising, as four out of five cases are female (Swartz, Blazer, George, & Winfield, 1990). This elevated rate of comorbidity with BPD in this sample of juvenile offenders is higher, however, than those found in other noncriminal populations (1.9% prevalence in the ECA community sample; Swartz et al., 1990). Bernstein, Cohen, Skodol, Bezirgianian, and Brook (1996) found that fear or anxiety, immaturity, depressive symptoms, and antisocial behaviours were associated with adolescent personality disorders from cluster B (Antisocial, Borderline, Histrionic, or Narcissistic). Gender did not moderate the effect of antisocial behaviours on cluster B personality disorders in this study, but a more recent study using the same sample did find evidence for a pathway from childhood externalizing symptoms to early adult cluster B personality symptoms in girls, but not in boys (Crawford, Cohen, & Brook, 2001).

Some researchers have suggested that BPD may be the female equivalent of ASPD in males. Individuals with BPD are relationally aggressive, impulsive, hostile, sexually promiscuous, and behaviourally and affectively disinhibited. Paris's (1997) review tested whether BPD may be the female equivalent of ASPD, concluding that

impulsivity accounts for the commonality between the two disorders. In females this impulsivity is expressed primarily in the context of interpersonal relationships, whereas for males, it is expressed in a wider range of contexts. Skodol (2000) found other similarities in the two disorders that are exhibited in gender-consistent ways. First, individuals with both types of disorder are highly manipulative and exploitive within interpersonal relationships, but the functions of these behaviours tend to differ. BPD individuals may exploit others to avoid interpersonal abandonment or rejection, whereas ASPD individuals tend to exploit others to obtain more instrumental gains. Second, though substance abuse and high-risk sexual activities are common to both disorders, in BPD these may serve to regulate negative emotions resulting from perceived rejection by others, while in ASPD they tend to be part of a more general pattern of risk taking for its own sake.

Research in the field of emotion suggests parallels between aggression and emotion regulation deficits. Recent evidence from brain imaging studies suggests that impulsive aggression and violence reflect dysfunction in the neural circuitry of emotion regulation, both currently and prospectively (Davidson, Putnam, & Larson, 2000). This neural circuitry controlling emotion regulation has been found to be shaped by early social influences (Davidson, Jackson, & Kalin, 2000). BPD has been described as a disorder of emotional regulation, particularly within interpersonal relationships.

Individuals diagnosed with BPD experience greater levels of negative emotions (for instance anger and hostility) and higher emotional variability in diary studies (Farchaus-Stein, 1996) and are less aware of their own and others' emotions in facial recognition experiments (Levine, Marziali, & Hood, 1997). In a review of studies on the linkage

between the emotional and social disturbances in BPD, Keltner and Kring (1998) proposed that persons diagnosed with BPD cope with negative emotions through aggression and other impulsive behaviours in their personal relationships. Studies conducted on the emotional development of young children suggest that emotional dysregulation is prospectively associated with antisocial behaviours in grade school (Cole, Zahn-Waxler, Fox, Usher, & Welsh, 1996). In children at risk for antisocial behavior, both girls and boys are more emotionally reactive, but girls are more likely to suppress negative emotion while boys are more likely to express negative emotion, most likely because of parental socialization cues (Cole, Zahn-Waxler, & Smith, 1994; Cole, Teti, & Zahn-Waxler, 2003). In boys anger has been found to be associated with antisocial behavior, while in girls anger and sadness are associated with antisocial behaviour (Cole et al., 1994). These findings suggest the hypothesis that emotion dysregulation may express itself first as a risk for engaging in antisocial behaviours in childhood and adolescence and then as BPD in females but as ASPD in males. Therefore borderline personality disorder may be the gendered equivalent of antisocial personality disorder in females.

Opposite Sex Relationships and Antisocial Behaviours

The transition from same-sex peer groups to merging with opposite-sex peer groups tends to occur during adolescence. These new mixed-sex peer groups are thought to provide a basis for norms about appropriate interactions between boys and girls, and to constrain the level of sexual behaviour and intimate contact between them to appropriate levels (Connolly & Goldberg, 1999). Males and females who exhibit antisocial behaviours, however, will probably have begun associating with other peers who also

exhibit antisocial behaviours by the time they reach adolescence (van Lier, Wanner, & Vitaro, 2007) and will be influenced by their peers to select other deviant peers as their dating partners (Brown, 1999). Males and females who exhibit antisocial tendencies tend to be sexually active earlier and to have more sexual partners (Capaldi, Crosby, & Stoolmiller, 1996; Pawlby, Mills, & Quinton, 1997). Further, males and females tend to become involved in unsupportive, conflictual, and violent romantic relationships (Lewis et al., 1991; Serbin, Peters, McAffer, & Schwartzman, 1991) and are less likely to use contraception (Kessler et al., 1997). Deviant peer groups offer fewer choices of supportive, nondeviant partners and therefore, less opportunity to learn and practice prosocial relationship behaviours that would contribute to a stable, positive romantic relationship history across the lifespan (Ehrensaft, Cohen, et al., 2003).

Assortative Mating: Behaviour Genetics of Antisocial Behaviour

Assortative mating refers to the likelihood of individuals with particular characteristics or disorders to selectively partner and produce offspring together. While the degree of assortative mating is quite trivial for most individual difference variables, it is quite substantial for antisocial behaviour (see Carey, 1994; Goldsmith & Gottesman, 1995 for reviews). Rutter (1978) found that marriage markets are limited by geography, for example to a community or neighbourhood, and this is significantly associated with antisocial behaviour. For example, particularly during adolescence, the odds of choosing a mate from the same school are very high. Since antisocial behaviour is known to vary across schools, this presents another risk for assortative mating between antisocial individuals.

Among couples in their longitudinal study of a representative birth cohort,

Krueger, Moffitt, Caspi, Bleske and Silva (1998) found that individuals and their partners (who were dating for 6 months, cohabitating, or were married) were positively associated on attitudes toward crime, variety of offenses committed, and delinquency of peers. The authors concluded that assortative mating for antisocial behaviour is substantial and went on to speculate that this finding may be due to the tendency for antisocial individuals to cluster in peer groups composed of similarly antisocial peers. More research is required in this area so the processes involved can be more clearly understood.

Implications of Antisocial Partners

Although the probability of assortative mating with other antisocial partners is high for both males and females, the effects of such a pairing may differ for the two sexes. Moffitt et al. (2001) found that girls who were involved with an antisocial partner at age 21 were the ones whose own antisocial behaviours persisted into adulthood. For boys, having an antisocial partner had no effect on persistence. Research (Woodward & Fergusson, 1999) suggests that this may be explained by sex differences in the implications of emotional commitment and sexual behaviour. The increased risk of sexual initiation, emotional commitment, and risk taking with older, less stable partners increases the girls' risk for early pregnancy (Woodward & Fergusson, 1999), and economic dependency—without the necessary emotional and economic support. Females also tend to lack supportive same-sex relationships and are heavily reliant on their partners for companionship and support (Pawlby et al., 1997). Females also appear to be more susceptible to the antisocial influence of their partners than males. For example, females are most often introduced to drugs by a boyfriend, whereas males are usually introduced by male peers (Miller, Alberts, Hecht, Trost, & Krizek, 2000). While

antisocial females tend to overvalue their male partners, antisocial males are reinforced within their peer groups for hostile, rejecting talk about women (Capaldi, Dishion, Stoolmiller, & Yoerger, 2001). Antisocial males also are not committed to, nor economically supportive of, their partners and children (Jaffee, Caspi, Moffitt, Taylor, & Dickson, 2001; Sampson & Laub, 1993). For males who partner with an antisocial female, the implications for pregnancy and childbearing are markedly less serious for their economic future (Mumola, 2000).

Antisocial Behaviours and Partner Violence

Partner violence is a very serious topic, as it has important implications for the intergenerational transmission of antisocial behaviour. It often occurs in the presence of young children (Fantuzzo, Boruch, Beriama, Atkins, & Marcus, 1997), increases the risk of child maltreatment (Appel & Holden 1998), may serve as a model of aggressive behaviour, and can result in chaotic disruptions that put children at risk of engaging in antisocial behaviours themselves (Jouriles et al., 2001).

Both males and females who engage in antisocial behaviour are at risk for perpetrating and receiving partner violence (Capaldi & Clark, 1998; Ehrensaft, Cohen, et al., 2003; Magdol, Moffitt, Caspi, & Silva, 1998). Partner violence towards females, however, is much more likely to result in injury and psychological distress (Straus, 1999), so it is a particularly dangerous outcome of antisocial behaviour for females. Girls with antisocial behaviours may have more difficulty exiting relationships when they become physically or psychologically abusive because they remain tied to their abusers through their early childbearing, economic limitations, and social isolation (Jaffee et al., 2001; Mumola, 2000).

Interestingly, women report more violence toward their partners than toward strangers, and it is the only area showing an absence in the pronounced sex difference in physically aggressive behaviour (Moffitt et al., 2001). Traditional measurements of adult antisocial behaviour have generally not included relational, verbal, and physical aggression toward partners and children. The common use of aggression in the context of intimate family relationships by females suggests, however, that rather than discontinuing, or “outgrowing,” their antisocial behaviour, females may concentrate its expression in late adolescence and adulthood within those relationships.

Implications of a Supportive Partner on Antisocial Behaviour

The effect of having a supportive partner seems significant for the desistance of antisocial behaviours in both males and females. Several studies have found that quality of marital attachments predicts decreases in delinquency for males (Laub, Nagin, & Sampson, 1998; Sampson & Laub, 1993) and higher probabilities of females switching out of conduct disorder (Quinton et al., 1993). A stable family life, a nondeviant peer group, and productive, planful behaviours reduced the risk for females assortative mating with antisocial males. Rutter and Quinton (1984) found that having a nondeviant partner has a protective effect on women institutionalized in childhood.

Researchers do not yet know why males are more likely to desist from their antisocial behaviours if they have a supportive marital partner, yet having an antisocial partner has no effect on the probability of a male persisting in their antisocial behaviours. Sampson and Laub (1993) suggest this may be because the presence of a “supportive” marital partner has been measured independent of the partner's degree of antisocial behaviour. That is, a female may be considered supportive of her partner even if she also

participates in antisocial behaviours.

Interpersonal Relationships and Antisocial Behaviours

As the research presented in this chapter has demonstrated, boys and girls share many of the same characteristics in their presentation of antisocial behaviours, yet there is also a fair amount of evidence that interpersonal relationships account for some sex differences in presentation. Compared to boys, girls who exhibit antisocial behaviours are more likely to present with current and/or prior depression (E. J. Costello et al., 2003; Renouf & Harter, 1990; Renouf et al., 1997) and a pattern of relationally aggressive behaviours perpetrated within the context of close relationships, rather than physical aggression in a peer group format (Chamberlain & Moore, 2002; Ehrensaft, 2005; Markovitz, Benenson & Dolensky, 2001, Reis, 1998). Parental supervision and monitoring are impaired in both boys and girls (Moffitt et al., 2001), but there is evidence that suggests that the content of those conflicts centres on control of their intimate relationships with females (Hagan et al., 1987), particularly since these girls are more likely to have reached early puberty (Caspi & Moffitt, 1991; Simmons & Blyth, 1987; Stattin & Magnusson, 1990) and that the level of emotional intensity may be higher for girls (Gore et al., 1993; Noller, 1994). The role of child abuse is less conclusive, though a few recent studies (Cohen et al., 2000; Moffitt et al., 2001) suggest that a history of multiple abusive events, especially sexual abuse and abuse by family members, may distinguish serious female juvenile delinquents from their male counterparts. There is evidence (Moffitt et al., 2001) that when girls do behave aggressively they tend to perpetrate this behaviour against family (parents, siblings, or their own children) or intimate partners and in the context of a conflict with these individuals. This pattern

contrasts with boys' violent behaviour, which is primarily perpetrated against strangers (Moffit et al., 2001).

It appears there is some moderate evidence (Ehrensaft, Wasserman, et al., 2003; Wasserman et al., 1996) that outcomes of antisocial behaviours relate to the role of interpersonal relationships with family, peers, romantic partners, and offspring. There is also some evidence (Paris, 1997; Skodol, 2000) that certain personality syndromes, especially borderline personality disorder, may be more likely adult outcomes of antisocial behaviours in girls than boys. Finally, while both males and females both tend to select antisocial romantic partners, it appears that such a selection has much more dire consequences for females (Pawlby et al., 1997; Woodward & Fergusson, 1999).

Relational Aggression

Over the past decade and a half, an increasing amount of attention has been paid to more subtle forms of aggression in which the aggressor does not overtly physically or verbally attack his or her victim but rather attempts to harm the target person by damaging and/or manipulating the victim's interpersonal relationships or status in the peer group. This interest has led to an explosion of research on these more subtle aggressive behaviours, which are referred to in the literature as "relational aggression" (Crick & Grotpeter, 1995), "social aggression" (Cairns et al., 1988; Galen & Underwood, 1997), or "indirect aggression" (Lagerspetz et al., 1988). This interest has also permeated into popular Western culture as evidenced by the success of Hollywood films like *Mean Girls* (Messick, Michaels, Fey, & Waters, 2004) and the popularity of books such as *Odd Girl Out* (R. E. Simmons, 2002) and *Words Can Hurt Forever* (Garbarino & deLara, 2002). The attention being paid to these behaviours is warranted, as these forms of

aggression have many consequences for the victims as well as implications for the aggressors.

Defining Relational Aggression

Crick et al. (1999) defined relational aggression as "behaviors that harm others through damage (or the threat of damage) to relationships or feelings of acceptance, friendship or group inclusion" (p. 77). Relational aggression involves interpersonally manipulating others rather than causing bodily harm through physical attacks (Crick & Grotpeter, 1995). Crick, Casas, and Nelson (2002) outlined that these manipulative behaviours include social exclusion (excluding a peer from a social group or social situation), social alienation (giving peers "the silent treatment"), rejection (spreading rumours or telling lies about a peer so others will reject him or her), and direct control (You aren't my friend unless...). Archer (2001) argues that as a result of the wide range of behaviours that constitute relational aggression it may manifest as either a direct form of aggression or an indirect form. For example direct control and social alienation are more confrontative and easily observed (a direct form of aggression), while social exclusion and rejection are much more covert, almost anonymous, aggressive acts (indirect forms of aggression). Underwood, Galen, and Paquette (2001a) contend that relational aggression serves multiple functions including gaining status or objects, exerting or maintaining control over the social group or social situations, and causing emotional and psychological harm. Gaining status or objects, exerting or maintaining control, and causing harm are also the main functions of physical and verbal aggression.

It must be noted, however, that there is currently a debate in the field as to which term is most appropriate to use when discussing and researching these particular

behaviours. Although Crick and Grotpeter first introduced the term relational aggression in 1995, the behaviour, or construct, it represents is not new. Similar behaviours had been researched (e.g., Lagerspetz et al., 1988) for years under the term “indirect aggression,” which Bjorkqvist (2001) argued was in use prior to the term “social aggression.” Others, such as Underwood et al. (2001a, 2001b), prefer to use the term social aggression.

Underwood et al. (2001a) contend that social aggression is the most appropriate term to use, not only because it was one of the first terms that included these behaviours but also because it is the most comprehensive. It includes behaviours defined in relational and indirect aggression while also being the only term that specifically includes nonverbal behaviours. Social aggression represents a wide assortment of aggressive behaviours, including physically aggressive behaviours, which occur in social situations (Underwood, 2003). This author believes that social aggression is too broad a term to use when researchers are interested specifically in the behaviours that Crick et al. (2002) outline as composing relational aggression.

Conversely, the term indirect aggression is too limiting. Although many of the behaviours included in it are the same as those that constitute relational aggression, using the moniker indirect aggression is problematic because, as Archer (2001) pointed out, many of these behaviours are not necessarily indirect. Sometimes the interpersonal relationship can be used to aggress indirectly, such as spreading rumours, but other times it is used very directly, such as name calling, in order to socially exclude another. As a result, for the purposes of this study the term relational aggression will be used throughout.

Sex Differences In The Use of Relational Aggression

Some researchers, such as Crick and Grotpeter (1995), have proposed that boys use greater amounts of physical aggression while girls tend to use relational aggression to express anger or inflict harm. Several studies have found that these relationally aggressive behaviours are more commonly found in girls than boys (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Crick & Grotpeter, 1995; Kazdin, 1992;) and are perceived as more harmful by girls than boys (Crick, 1995). Archer's (2004) meta-analysis of sex differences in aggression in real world settings found that when peer and teacher ratings were used there was only a small sex difference in the female direction for school-aged samples, while if observational methods were used girls were found to use relational aggression much more often than boys. Crick (1997) found evidence that boys and girls have more tolerant attitudes toward physical aggression by boys and relational aggression by girls, and that nonnormative aggression (such as physical aggression by girls) predicts maladjustment in both sexes.

Most studies of community samples have found that sex differences in relational aggression are less evident in early childhood (Tiet, Wasserman, Loeber, McReynolds, & Miller, 2001), increase with age, and are most evident at adolescence, at least in the context of same-sex conflicts (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992). Archer's (2004) meta-analysis also confirmed this although he did caution that this may have been confounded by the use of nominations with children of young ages (also see Crick et al., 1997 for an exception to this age trend). Chamberlain and Moore (2002), in a sample of female juvenile delinquents referred for a community alternative to incarceration, found high levels of relational aggression both perpetrated and received by girls from their

friends. The investigators also reported that these behaviours were significant threats to these girls' relationships with foster parents and to the stability of their foster care placements. Interestingly, Wolfe, Scott, and Crooks (2005) found some evidence that relational aggression loads onto a "dating abuse" factor perpetrated by adolescent girls toward their boyfriends but not onto boys' dating abuse toward their girlfriends.

A recent study conducted by Salmivalli and Kaukiainen (2004) investigated whether females were more relationally aggressive than males. Their sample included 272 girls and 274 boys from 22 school classes in Finland. The participants were from three grade levels and were aged 10, 12, and 14 years. Aggression was measured using the Direct and Indirect Aggression Scales (Bjorkqvist, Lagerspetz, & Osterman, 1992) which was administered as a peer- and self-report measure. Each child evaluated all his/her same-sex classmates, and themselves, in terms of their use of direct physical (hitting, kicking, etc.), direct verbal (yelling, insulting, etc.) and indirect (rumour spreading, social exclusion, etc.) aggression using a 5-point Likert scale, with 0 = *never* and 4 = *very often*. Multivariate analyses of variance, with both peer- and self-reports of physical, verbal, and indirect aggression as dependent variables, were conducted across all age groups and in each age group separately. Salmivalli and Kaukiainen found that girls were generally nonaggressive compared to boys but that girls who were highly aggressive rarely used all the forms of aggression to any great extent. In fact, Salmivalli and Kaukiainen found a group of highly aggressive females who used relational aggression almost exclusively. This was in direct contrast to highly aggressive males who were found to favour physical and verbal aggression or to employ high levels of all forms of aggression. Salmivalli and Kaukianen did not find any highly aggressive males who

almost exclusively used relational aggression. From these findings it appears that there is a group of females in the population that is highly aggressive but who employ relationally aggressive behaviours almost exclusively in order to inflict harm.

Research into girls' friendships indicates there may be a relationship-based explanation for their greater use of relational aggression than boys. Girls are socialized from an early age to not use physical aggression, particularly toward other girls (Keenan & Shaw, 1997). This, combined with the fact that children's friendships are often segregated by sex until at least late childhood or early adolescence, results in girls' limited exposure to, and disapproval of, physical aggression in their own peer relationships (Feiring & Furman, 2000). Moreover, the small group size of female-female friendships and the greater value placed on mutual support in girls' social relationships (Markovitz et al., 2001; Reis, 1998) may all combine to make relational aggression a more effective aggressive tactic for girls to use (Crick & Grotpeter, 1995). That is, tactics aimed at undermining or damaging close personal relationships may be more meaningful to girls than boys because girls have more "pair" social networks (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992) and therefore place a higher value on the intimate quality of these relationships.

Bjorkqvist (1994) proposed another explanation as to why females may use more relational aggression in the context of same-sex conflicts than males do. Bjorkqvist argued that the sex differences were the result of the use of a cognitive strategy he referred to as the "effect–danger ratio". This strategy involves the aggressor considering the situation and then choosing which aggressive tactic to employ. The determination is made based on the aggressor's judgment of which tactic would be the most effective and would pose

the least amount of danger to the aggressor. As females are usually in conflict with other females, targeting social relationships would be the most effective tactic (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Crick & Grotpeter, 1995). Moreover, as relational aggression is covert, it represents the least dangerous strategy, as the perpetrator is often not identified. Thus, Bjorkqvist contends that females use relational aggression as it represents an aggressive strategy that gives the greatest effect with the least chance of harm to the aggressor.

Despite the fact that the study of relational aggression offers a promising direction to the understanding of sex differences in antisocial behaviours, researchers have highlighted some cautions. The most important one is that, in spite of the accumulating evidence which demonstrates that girls use more relational aggression than boys, there is a group of girls who are highly aggressive who use relational aggression almost exclusively, and that this aggression has negative effects for both perpetrators and victims, studies have not yet definitively shown that the majority of girls who exhibit antisocial behaviours use relational aggression *instead of* physical aggression (McKnight & Putallaz, 2005). Almost no studies, with the exception of Tiet et al. (2001), have investigated whether relational aggression is differentially associated with serious antisocial behaviours, such as juvenile delinquency or conduct disorder, in males and females. Therefore, it is not yet possible to conclude that relational aggression is an 'antisocial' behaviour *per se*. The research to date supports the premise that antisocial girls are *also* relationally aggressive but more work needs to be done if the argument that girls are *differentially relationally aggressive* is to be made (McCord, 2005).

The Function of Relational Aggression

To date, very few theorists or researchers have examined the possible reasons *why* females relationally aggress at the onset. The first who attempted to do so were the sociologists Adler and Adler (Adler & Adler, 1998; Adler, Kless, & Adler, 1992). For 8 years the Adlers engaged in intensive insider participant observation in their own children's school community trying to understand and document the complex processes involved in school-aged children's friendships, power, and popularity. Adler and Adler (1998) were particularly interested in the sex differences in how those concepts were constructed. Over the course of their ethnographic investigation they determined that males and females gained friends, power, and popularity based on similar, yet different, variables.

One of the key variables they identified for females was what they referred to as "social skills" (Adler & Adler, 1998; Adler et al., 1992). Adler et al. identified two "social skills" in particular which were crucial in the formation of girls' friendships and their location in the social hierarchy. Adler and Adler referred to them as "precocity" and "exclusivity." "Precocity" they defined as the early attainment of adult social characteristics such as the ability to understand intra- and intergroup relationships, good verbal expression, the ability to manipulate others into doing what they want, the ability to convince others of their point, and interest in more "mature" social concerns such as boys and make-up. Adler et al. transcribed a primary teacher's description of the popular, precocious females in her class. The teacher described them as taking on "junior-high school characteristics" in terms of their rivalries and jealousies. The teacher went on to say that their interactions were often characterized by a "deep-running nastiness."

“Exclusivity” was defined as an individual’s desire, need, and ability to form elite social groups using negative tactics such as rumour-spreading, gossiping, bossiness, and “meanness” (Adler & Adler, 1998; Adler et al., 1992). This “exclusivity” that is delineated is actually relational aggression. Adler and Adler describe in detail how the popular females, usually led by one or two “ring-leaders,” would skillfully use relational aggression in order to quickly make cliques and establish themselves at the top of the social hierarchy. Popular females would then continue to relationally aggress in order to limit access to their friendship circle and maintain their social position.

Using their detailed observations, the Adlers (Adler & Adler, 1998; Adler et al., 1992) developed the theory that females used relational aggression in order to form exclusive friendship circles (i.e., cliques), propel their group to the top of the social hierarchy, and maintain their social position. Thus, the Adlers argued the function of relational aggression for females was to obtain social power and dominance over same-sex peers (i.e., popularity). The earlier a female became adept at relational aggression, the better the chance she had of obtaining a high social standing among her peer group.

Merten (1997), another sociologist, expanded on the Adlers’ (Adler & Adler, 1998; Adler et al., 1992) argument. Merten formulated his theory on the basis of a 3-year longitudinal study of junior high school students. During the study, two female ethnographers spent a large amount of time observing and interviewing the students at the school while a third female ethnographer interviewed parents and adults in the community. Over the course of the study Merten became particularly interested in a group of females who were both popular and “mean.” Merten defined meanness as “an undifferentiated characterization for acts, either through commission or omission, whose

intent, and result, was to hurt someone emotionally” (p. 175). Examples of “meanness” included acts of relational aggression, such as social exclusion, rumour spreading, and gossiping, but verbal aggression as well, such as yelling at another and name calling. Most of the examples Merten documents, however, are acts of relational aggression rather than verbal aggression.

Very similar to the Adlers (Adler & Adler, 1998; Adler et al., 1992), Merten (1997) found the popular, mean females were a clique of 10 to 12 members led by 1 or 2 ring-leaders. Unlike the Adlers, however, Merten found the members of the popular clique did not just relationally aggress against rivals outside of their group in order to maintain their social position among their class and within the school, but they relationally aggressed within their own group as well in order to maintain their social position within the clique. The leaders appeared to do the most of this, but other group members would also attempt to improve or maintain their position within the group by relationally aggressing against other group members.

Based on these findings Merten (1997) argued that relational aggression’s function for females was to mediate the complex connections between female competition, conflict, popularity, and power. Merten explained that both popularity and relational aggression (and, to a certain extent, verbal aggression) had hierarchical aspects and implications. Popularity, however, could be transformed into power, which was also hierarchical. Relational aggression could also be transformed into power. Thus, power was the common denominator between popularity and relational aggression. Therefore, Merten contended that relational aggression could be expressed in terms of popularity, and popularity could be expressed in terms of relational aggression, with power

mediating the transition from one to the other. For Merten, relational aggression was, in a fundamental sense, discourse about hierarchical position, popularity, and invulnerability.

Vaillancourt (2005) has developed the most comprehensive theory of the function of female relational aggression. She argues that the use of relational aggression has an evolutionary history, that females use it in order to secure access to desirable mates and resources. Vaillancourt goes on to argue that females use relational aggression because it represents an effective and least dangerous intrasexual strategy that provides access to quality mates and their resources.

Vaillancourt (2005) cites several studies (Crick, 1996; Galen & Underwood, 1997; Paquette & Underwood, 1999) which have shown that relational aggression is particularly damaging to female victims as evidence for her theory. Vaillancourt argues that because these studies have demonstrated that female victims of relational aggression often suffer from decreased self-esteem, increased anxiety and depression, school departure, and sometimes suicide, it is an effective way to disparage a female rival. Vaillancourt contends that a female victim of relational aggression would be less willing or able to vie for a male's affection if she were suffering psychologically or had removed herself from the competition entirely (i.e., suicide).

Vaillancourt (2005) maintains that studies (e.g., Vaillancourt & Hymel, 2004) have shown that prominent and powerful females use relational aggression more than lower status females. This makes sense, as high status females would be more likely to succeed in reducing a rival, given their higher social standing. Vaillancourt argues that females use relational aggression to achieve and maintain hegemony, even from an early age, because the competition for elevated social status may be linked to reproductive

fitness.

Vaillancourt (2005) contends that the use of relational aggression by females may represent an effective means of securing mates (direct benefit), which in turn would lead to increased reproductive success (ultimate benefit). To buttress her argument, Vaillancourt cites the ethnographic work of Artz (1998a, 1998b) and Marsh and Paton (1986) who found that adolescent females repeatedly accused other females of being "sluts." Vaillancourt states that exaggerating another's sexual history is consistent with the evolutionary idea that a female's success in obtaining a desirable, committed, mate is largely determined by his appraisal of her fidelity.

Vaillancourt (2005) argues that cross-cultural studies on females with diverse cultural backgrounds have demonstrated that females reliably express their aggression in similarly covert and socially manipulative ways around the world. Vaillancourt sustains this argument to suggest that these findings challenge theories of socialization, as "culture" is not a fixed variable, and provide evidence that relational aggression is an evolved adaptation.

The last piece of evidence Vaillancourt (2005) uses to support her theory is the fact that females are more likely to use intrasexual strategies (i.e., relational aggression) when their reproductive value is at its peak, around the age of puberty (ages 11-15), because this corresponds to when competition for mates is fiercest. Vaillancourt argues this corresponds exactly to the developmental period studies (e.g., Bjorkqvist, Lagerspetz, & Kaukiainen, 1992) have found females to be the most relationally aggressive. All of this evidence Vaillancourt argues, supports the idea that relational aggression pays off in evolutionary terms for females by increasing access to mates and

their resources, thereby increasing their reproductive fitness.

Risk Factors for Relational Aggression

To date there is very little research which examines the risk factors for relational aggression. Two recent studies, however, have examined this important topic. Herrenkohl et al. (2007) sought to document the percentage of youth who engage in physical violence and/or relational aggression and also sought to assess the extent to which the two behaviours share underlying risk factors. The large sample consisted of 1,942 students (50.2% female) enrolled in public and private schools in Washington state. The data were collected from 961 seventh grade students (mean age 13.1 years) and 981 ninth grade students (mean age 15.1 years). Physical violence was measured by two self-report questionnaire items which asked if, over the course of the past year, the participant had “beat up someone so badly that they needed to see a doctor or nurse” or had “threatened someone with a weapon” (p. 390). Relational aggression was measured by two self-report questionnaire items which asked if, over the course of the past year, the participant had “gotten back at another student by not letting them be in your group of friends” or had “told lies or started rumours about other students to make other kids not like them” (p. 390). These items were then coded into dichotomous (0/1) indicators of each variable.

A positive response on any one indicator led to the participant being categorized as having engaged in violence or relational aggression (Herrenkohl et al., 2007). Self-report questionnaires assessed a variety of characteristics of a participant’s family, school, and community, which were the risk factors. Initial analyses grouped the participants based on their dichotomous scores on the physical violence and relational aggression scales. Four groups were created: nonoffenders (a 0 on both indicators; 78.7%

of the sample), physically violent (a 1 on the physically violent indicator; 6.0% of the sample), relationally aggressive (a 1 on the relational aggression indicator; 11.9% of the sample) and a violent and relationally aggressive group (a 1 on both indicators, 3.4% of the sample). An analysis of group composition showed that the nonoffender group was nearly gender balanced (49.2% female) and the relationally aggressive group had a higher percentage of females (55.7%). The two groups which included violent aggression were predominantly male (67.0% male for the physically violent group and 52.3% male for the physically violent and relationally aggressive group).

Herrenkohl et al. (2007) then ran one-way ANOVAs on each risk factor independently to look for group differences. The four groups differed significantly on every risk factor. Nonoffenders had the lowest means on every risk factor, while the relationally aggressive group had significantly higher means than the nonoffender group on poor family management, family conflict, family history of antisocial behavior, parental attitudes toward antisocial behavior, low commitment to school, perceived availability of drugs, interactions with antisocial peers, friends' use of drugs, gang involvement, rebelliousness, attitudes favourable to antisocial behavior, attitudes favourable to drug use, sensation seeking, concentration problems, and impulsivity (Herrenkohl et al., 2007). Physically violent youth were significantly higher than the nonoffenders on every risk factor and significantly higher than the relationally aggressive group on every risk factor except for parental attitudes favourable to drug use, youth attitude favourable to drug use, sensation seeking, and impulsivity, where the two groups were not significantly different. With one exception (community disorganization), the physically violent and physically violent and relationally aggressive groups did not differ

on any risk factors. Herrenkohl et al. noted that the fact that the analyses differentiated among youth that were violent and youth that were relationally aggressive was important, indicating two distinct behavior patterns. Moreover, Herrenkohl et al. also argue that the fact that the relationally aggressive group resembled the violent groups in their exposure to a variety of overlapping risk factors, although at lower exposure levels, could indicate that the two distinct behaviours emerge from similar processes.

Conversely to Herrenkohl et al. (2007), Jolliffe and Farrington (2006) investigated a specific risk factor for relational aggression: low empathy. Jolliffe and Farrington examined the association between cognitive and emotional empathy and various kinds of bullying behavior in males and females. Their sample consisted of 720 adolescents (376 males, 344 females) in Year 10 (mean age of 15 years) from three schools in Hertfordshire, Britain. Empathy was measured using the Basic Empathy Scale (BES; Jolliffe & Farrington, 2005, cited in Jolliffe & Farrington, 2006), a self-report questionnaire that assesses cognitive, emotional and total empathy. A self-report bullying questionnaire (Whitney & Smith, 1993, cited in Jolliffe & Farrington, 2006) measured direct bullying, both physical (hitting, kicking, etc.) and verbal (name-calling, insulting, etc.), and indirect bullying (relationally aggressive behaviours such as social exclusion and rumour spreading).

All the questions on the bullying questionnaire measured bullying incidents that had occurred that particular school year. Examining the prevalence of bullying behaviours, regardless of type, Jolliffe and Farrington (2006) found that 26.9% of males had committed at least one bullying behavior over the past school year while only 14.8% of females reported engaging in bullying behavior over the course of the school year. In

terms of frequency of bullying behavior, 16% of males reported being involved in bullying once or twice, 6.9% reported being involved sometimes, 2.1% reported being involved once a week, and 1.9% reported being involved several times a week. For females the frequencies were significantly less, with 11% being involved once or twice, 2.9% involved sometimes, 0.3% involved once a week, and 0.5% involved several times a week.

Jolliffe and Farrington (2006) then calculated odds ratios and effect sizes to identify the relationships between frequency of bullying behavior and cognitive, affective, and total empathy, type of bullying and cognitive, affective, and total empathy for both sexes. What they found was that males that reported bullying did not differ from nonbullies on any of the measures of empathy with the exception of males that reported bullying very frequently, who were found to be deficient in affective and total empathy. Interestingly however, females who bullied had significantly lower affective and total empathy scores than female nonbullies. Jolliffe and Farrington caution, however, that this bully/nonbully difference may be the result of the very low empathy of a small number of high-frequency female bullies. In terms of type of bullying, males who bullied violently were found to have lower empathy than those who did not bully and those who bullied more verbally and indirectly. In females, however, those who bullied indirectly demonstrated lower affective and total empathy. In a very interesting finding, Jolliffe and Farrington reported that females who committed violence did not have significantly lower empathy than those who did not commit violence. Yet Jolliffe and Farrington do caution that this may have been the result of the very small sample size as the effect sizes indicated possible differences. These findings seem to indicate that low empathy is a risk

factor for physical aggression in males and relational aggression in females.

Relational Aggression, Antisocial Behaviour, and Personality

Although few in number, there have been some studies which have examined the relationship between relational aggression, antisocial behaviours, and dimensions of personality. Studies conducted on children and adolescents have found that high levels of relational aggression are positively correlated with maladaptive personality features and externalizing behaviours (Crick, 1996; Crick et al., 1997; Crick & Grotpeter, 1995; Prinstein et al., 2001). These findings, however, are of limited utility due to the fact that these children and adolescents also engaged in more overt forms of aggression as well.

Werner and Crick (1999) examined the interrelations among relational aggression and social-psychological adjustment in a community sample of young adults. Werner and Crick also explored sex differences in the patterns of associations between relational aggression and a range of adjustment indices. A total of 255 undergraduate students (55% women) from a large midwestern university comprised the sample. The sample was recruited from seven university-affiliated fraternities and sororities and was made up of freshman, sophomores, juniors, and seniors. A 24-item peer-nomination instrument created by Werner and Crick was used to assess aggression and social adjustment. The Personality Assessment Inventory (PAI; Morey, 1991, cited in Werner & Crick, 1999), a self-report questionnaire, was used to measure features of adult personality, well-being, and clinical symptomology, including stress, depression, antisocial personality features, and borderline personality features. The peer-nomination instrument and the PAI were completed during group sessions with Werner. To examine associations between relational aggression and adjustment, Werner and Crick computed correlation coefficients

relational aggression and adjustment, Werner and Crick computed correlation coefficients between peer nominations of relational aggression and social-psychological adjustment variables. The correlation coefficients were computed separately for men and women. For men, relational aggression was positively associated with peer rejection and egocentricity, while for women relational aggression was positively correlated with peer rejection, antisocial behavior, stimulus-seeking, egocentricity, affective instability, identity problems, negative relationships, self-harm behavior, affective features of depression, and bulimic symptoms. Also, in women only, relational aggression was negatively correlated with general life satisfaction. After this Werner and Crick ran a series of hierarchical regression analyses and found that relational aggression contributed significantly to the prediction of peer rejection, prosocial behavior, stimulus seeking, egocentricity, affective instability, negative relationships, and self-harm. In all cases relational aggression was associated with higher levels of maladjustment. From these findings Werner and Crick concluded that relational aggression was linked to borderline personality features and antisocial personality features in both males and females. A similar study conducted on a sample of intercollegiate athletes found that relational aggression was positively associated with alcohol use and negatively associated with prosocial behaviour in women only (Storch, Werner, & Storch, 2003).

The most interesting findings in this area, however, came from a study conducted by Marsee et al. (2005) on the association of psychopathic traits with aggression and antisocial behaviours in nonreferred boys and girls. Although there is an ongoing debate surrounding the psychopathy construct, which is not recognized explicitly in the current DSM, recent findings from adult samples (Cooke & Michie, 2001; Hare & Neumann,

2005) as well as child samples (Frick, Bodin, & Barry, 2000a, 2000b) suggest that there are three facets of the psychopathy construct that can be measured independently of antisocial behaviour and therefore can be considered personality traits or dimensions. These facets include (a) narcissism, which is characterized by a deceitful and arrogant interpersonal style, (b) callous-unemotional traits, which is generally a lack of empathy or deficient affective experience, and (c) impulsivity, an irresponsible and impulsive behavioural style. These personality traits are not found in one specific DSM-IV-TR (APA, 2000) personality disorder, but rather are scattered throughout a number of Axis I and II disorder diagnostic criteria (a number of the Axis II cluster B disorders in particular). This fact is important considering that Marsee et al. found a strong, consistent association between teacher-rated psychopathic traits (narcissism, callous-unemotional traits, and impulsivity) and self-reported relational aggression in girls only. The association was not present in boys. Adding to this, Frick et al. (2003) found that the presence of callous-unemotional traits, in the absence of conduct problems, was a stronger predictor for later antisocial behaviours in girls than in boys. Thus, it appears that the study of personality traits, particularly those characteristic of personality pathology, seems to be important for understanding the development of antisocial and aggressive behaviours in girls.

Summary

This chapter examined the theoretical and empirical evidence concerning females' antisocial behaviours and their possible link to underlying psychopathology, specifically personality disorders and their comorbid Axis I syndromes. Livesley (1998, 2001) stated that the core clinical features of personality disorder are chronic interpersonal

dysfunction and problems with the self and identity. Pincus's (2005a, 2005b) CIIT theory of personality disorders was explained, and it was demonstrated that Pincus's theory enhances the explanatory implications of Livesley's core defining features of personality disorder by emphasizing the "interpersonal situation" as an integrative theoretical concept.

Psychopathology is currently classified in North America using the DSM-IV-TR (APA, 2000). This chapter highlighted a number of issues with this classification scheme. The fact that the personality criteria underlying each individual personality disorder are not adequately grouped, leading to comorbidity of Axis II disorders with other Axis II disorders as well as with Axis I syndromes, was discussed. Possible sex bias in the diagnostic criteria themselves, as well as on the part of clinicians who make diagnoses, was examined. All of these problems with the DSM-IV-TR's current conceptualization of personality disorders were presented to illustrate the point that just because females who exhibit antisocial behaviours, relational aggression in particular, are not diagnosed with a personality disorder does not mean that they do not possess underlying personality pathology. It just indicates that the current, limited diagnostic categories and criteria present in the DSM-IV-TR may not be able to adequately provide a label for it.

The chapter then went on to discuss the types of antisocial behaviour females have been found to engage in and how those problem behaviours have been used to diagnose underlying psychopathology. Research was presented that demonstrated boys and girls share many of the same characteristics in their presentation of antisocial behaviours, yet it was also shown that there is a fair amount of evidence that interpersonal relationships account for some sex differences in presentation. For example,

it was demonstrated that compared to boys, girls who exhibit antisocial behaviours are more likely to present with a pattern of relationally aggressive behaviours perpetrated within the context of close relationships, rather than physical aggression in a peer group format (Chamberlain & Moore, 2002; Ehrensaft, 2005; Markovitz et al., 2001; Reis, 1998). Evidence was presented (Moffit et al., 2001) that when girls do behave aggressively they tend to perpetrate this behaviour against family (parents, siblings, or their own children) or intimate partners and in the context of a conflict with these individuals. This pattern contrasted with boys' violent behaviour, which is primarily perpetrated against strangers (Moffit et al., 2001).

This chapter next presented some moderate evidence (Ehrensaft, Wasserman, et al., 2003; Wasserman et al., 1996) that outcomes of antisocial behaviours relate to the role of interpersonal relationships with family, peers, romantic partners, and offspring. Evidence (Paris, 1997; Skodol, 2000) was also presented that certain personality syndromes, especially borderline personality disorder, may be more likely adult outcomes of antisocial behaviours in girls than boys. Finally, it was shown that while both males and females both tend to select antisocial romantic partners, it appears that such a selection has much more dire consequences for females (Pawlby et al., 1997; Woodward & Fergusson, 1999).

The chapter then went on to detail how interpersonal relationships can be used in order to inflict harm on others. It was explained that relational aggression involves interpersonally manipulating others rather than causing bodily harm through physical attacks (Crick & Grotpeter, 1995). Crick, et al. (2002) delineated that these manipulative behaviours included social exclusion, social alienation, rejection, and direct control. A

recent study conducted by Salmivalli and Kaukiainen (2004) was outlined which found that females were generally nonaggressive compared to males but that females who were highly aggressive rarely used all the forms of aggression to any great extent. It was detailed that Salmivalli and Kaukiainen found a group of highly aggressive females who used relational aggression almost exclusively. It was argued that tactics aimed at undermining or damaging close personal relationships may be more meaningful to girls than boys because girls have more “pair” social networks (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992) and therefore place a higher value on the intimate quality of these relationships.

Last, some studies which examined the relationship between relational aggression, antisocial behaviours, and dimensions of personality were reviewed. It was determined that high levels of relational aggression are positively correlated with maladaptive personality features and externalizing behaviours. The chapter concluded with the assertion that the study of personality traits, particularly those characteristic of personality pathology, seems to be important for understanding the development of antisocial and relationally aggressive behaviour in girls.

CHAPTER THREE: METHODOLOGY AND PROCEDURES

This chapter provides the quantitative methods and procedures used to study the personality and neuropsychological factors involved in female relational aggression. The methods and procedures used are elaborated under the following headings: (a) research approach, (b) selection of site and participants, (c) initial recruiting procedure, (d) initial sample characteristics, (e) instrumentation (f) data collection and recording, (g) obtaining the final sample, (h) data processing and analysis, (i) dissemination, (j) methodological assumptions, (k) limitations of the study, and (l) ethical considerations. Beginning with the research approach, the researcher provides an explanation of why a correlational research design was chosen for this study. Following this the specific methods and procedures that were used to carry out the study are elaborated. This provides the opportunity for others to replicate the study should they choose to do so. Finally, the methodological assumptions that underlie the study and the ethical considerations that were addressed are provided.

Research Approach

Creswell (2005) highlights the appropriateness of a correlational research design for this study, which had the goal of examining the association between females' who are highly, yet almost exclusively, relationally aggressive with DSM-IV-TR (APA, 2000) clinical syndromes (Axis I), personality disorders (Axis II), neuropsychological dysfunction, and other psychopathological behaviours. Creswell contends that correlational designs provide an opportunity for researchers to explain the relationship between variables. Further, Creswell maintains that correlational designs are used when the researcher wants to see how changes in one variable are reflected in changes in

others. In this particular study the girls' scores on the relational aggression measure were compared to their scores on the DSM-IV-TR aligned measure of psychological functioning to examine how they covaried. This allowed for an explanation of the relationship between relational aggression and underlying psychopathology.

In this study the independent variable was relational aggression, which was measured using the Direct and Indirect Aggression Scales (DIAS; Bjorkqvist, Lagerspetz, & Osterman, 1992). The dependent variables were DSM-IV-TR (APA, 2000) clinical syndrome diagnostic items (Axis I), personality disorder diagnostic items (Axis II), neuropsychological dysfunction, and clinically relevant psychopathological behaviours. The dependent variables were measured using the Coolidge Personality and Neuropsychological Inventory (CPNI; Coolidge, 1998; Coolidge, Thede, Stewart, & Segal, 2002).

IV: Relational Aggression	DV(1): DSM-IV-TR Axis I Clinical Syndromes
	DV(2): DSM-IV-TR Axis II Personality Disorders
	DV(3): Neuropsychological Dysfunction
	DV(4): Clinically Relevant Psychopathological Behaviours

The four operational research questions for this study are:

1. Do females who are highly relationally aggressive also exhibit behaviours that are associated with Axis I disorders found in the DSM-IV-TR (APA, 2000)?
2. Do these relationally aggressive females have personality traits typically associated with any of the DSM-IV-TR (APA, 2000) personality disorders?
3. Do highly relationally aggressive females have high levels of neuropsychological behavioural impairment?

4. Do highly relationally aggressive females exhibit other clinically relevant psychopathological behaviours?

Selection of Site and Participants

This study employed a multistage cluster sampling procedure. This procedure allows a researcher to choose a sample in two or more stages because the researcher cannot easily identify the target population (Creswell, 2005). In the first phase female students in grade 6, 7, and 8 in 12 elementary schools located in a medium-sized city in southern Ontario and their parents were selected to participate in this study. This sample was chosen as it represented all the female students in one school board in one city in southern Ontario. Once permission was obtained from the school board and each individual principal, the researcher travelled to each site, convened the potential participants, delineated the study to the potential participants, and disseminated letters of information and consent. In the second phase the participants who had given informed consent were administered the Direct and Indirect Aggression Scales (Bjorkqvist, Lagerspetz, & Osterman, 1992). K-means cluster analysis was then run on the three scales of the DIAS, and five clusters representing unique aggression profiles emerged. K-means cluster analysis seeks to identify homogeneous subgroups of cases in a sample. That is, it seeks to identify a set of groups which both minimize within-group variation and maximize between-group variation.

The 30 female participants who constituted cluster one, the highly, yet almost exclusively, relationally aggressive cluster, became the target sample. These participants were then matched on a number of variables to females in cluster five, the nonaggressive cluster, who became the control group. This method allowed for the identification and examination of the relationally aggressive girls and allowed the researcher to carefully

create a matched nonaggressive control group.

Initial Recruiting Procedure

Clearance by Brock University's Research Ethics Board was obtained prior to recruitment (see Appendix). Permission to conduct the current study was also obtained from the school board under whose jurisdiction the 12 elementary schools were and each of the 12 principals whose schools the study was conducted in. Once permission was obtained, the researcher went to each school and convened all the grade 6, 7, and 8 female students in a location which was convenient for the school staff (the library, gymnasium, or an empty classroom). This initial meeting took no longer than 10 minutes. The researcher explained the purpose of the study to the potential participants, and any questions they had were answered. The potential participants were assured that any information collected was both anonymous and confidential and were informed that all the completed questionnaires would be stored in a locked cabinet at Brock University. Further, they were assured that no one would have access to the information except the researcher and faculty advisor. The researcher clearly explained that any information gathered will be reported only in aggregate (group scores). The researcher stressed that their participation in the study was entirely voluntary.

Subsequent to the introduction and orientation session, each female student was given an envelope containing the parental information letter and two informed consent forms (one to be returned and one for the participant to keep). If the female students and their parents/guardians agreed to participate, and the parent/guardians agreed to have their daughter participate, in the study, they signed the Informed Consent Form, put it into the provided envelope, sealed it, and had the student return the envelope to the

school. The researcher returned to the school approximately 2 days after the initial visit to retrieve the returned envelopes.

Initial Sample Characteristics

During the initial recruiting procedure, 560 information and consent packages were distributed. Informed consent was received for 365 participants (65.2%). These female students became the initial sample. This sample consisted of 129 grade 6 students (35.4%), 123 grade 7 students (33.7%), 87 grade 8 students (23.8%), and 26 students who did not return a completed Demographic Information Form (7.1%). The students ranged in age from 11.4 years old to 14.3 years old ($M = 12.6$ years old, $SD = 0.94$ years). The majority of the participants were Caucasian (90.1%), but there were some Mixed ethnicity (1.3%), African American (0.5%), Asian (0.3%), Arab (0.3%), and Latino (0.3%) participants as well. Some of the students (7.1%) did not indicate their ethnicity. Demographic information for the initial sample is presented in Table 1. The students' parents were mostly well educated, with 69.6% of mothers/female guardians and 66.1% of fathers/male guardians reporting having had some form of postsecondary education. In addition, 46.3% of the mothers/female guardians and 44.2% of fathers/male guardians reported completing an apprenticeship program, earning a college diploma, or earning a university degree. The majority of the female students in this initial sample (36.4%) were members of families whose approximate total yearly income was between \$60,000 and \$100,000.

Table 1

Demographic Characteristics of Initial Sample

Variable	<i>n</i>	%
Student's grade (Total <i>N</i> = 365)		
Grade 6	129	35.4
Grade 7	123	33.7
Grade 8	87	23.8
Not reported	26	7.1
Student's ethnicity (Total <i>N</i> = 365)		
Caucasian	329	90.1
Mixed	5	1.3
African American	2	0.5
Other (Asian, Arab, Latino)	3	0.9
Not reported	26	7.1
Mother's/Female guardian's education level (Total <i>N</i> = 365)		
Some high school	23	6.3
Graduated high school	62	17.0
Some trade school	4	1.1
Completed apprenticeship	2	0.5
Some college	56	15.3
College diploma	79	21.6
Some university	25	6.8
Undergraduate degree	70	19.2
Master's degree	17	4.7
Doctorate	1	0.3
Not reported	26	7.1

(table continues)

Variable	<i>n</i>	%
Father's/Male guardian's education level (Total <i>N</i> = 365)		
Some high school	25	6.8
Graduated high school	73	20.0
Some trade school	11	3.0
Completed apprenticeship	19	5.2
Some college	46	12.6
College diploma	67	18.4
Some university	23	6.3
Undergraduate degree	59	16.2
Master's degree	13	3.6
Doctorate	3	0.8
Not reported	26	7.1
Approximate total yearly family income (Total <i>N</i> = 365)		
Under \$30,000	54	14.8
\$30,000 - \$59,999	83	22.7
\$60,000 - \$100,000	133	36.4
Over \$100,000	68	18.6
Not reported	27	7.4

Instrumentation

Three instruments were used in this study. The first was the Direct and Indirect Aggression Scales (Bjorkqvist, Lagerspetz, & Osterman, 1992). This is a self- and peer-report instrument that measures physical, verbal, and relational aggression. It consists of 24 items assessed using a 5-point Likert scale, ranging from (0) *never* to (4) *very often*. Five items measure physical aggression (e.g., *Hits the other one? Kicks the other one?*), 7 items measure verbal aggression (e.g., *Yells at, or argues with, the other one?*), and 12 items measure relational aggression (e.g., *Tells bad or false stories about the other one; Becomes friends with another as a kind of revenge*). Factor analysis has confirmed the construct validity of the three subscales (Lagerspetz, et al., 1988; Toldos, 2005). High levels of internal consistency have been found, ranging from 0.80 to 0.96, in subsamples that have used this instrument in a variety of cultural settings (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Osterman et al., 1999; Osterman et al., 1994; Owens, Daly & Slee, 2005; Salmivalli & Kaukiainen, 2004; Toldos, 2005).

The second instrument used was the Coolidge Personality and Neuropsychological Inventory (Coolidge, 1998; Coolidge, Thede, Stewart, & Segal, 2002). This is a standardized measure of children's and adolescents' (aged 5-17 years) psychological functioning. The 200-item parent-as-respondent CPNI assesses (a) nine Axis I syndromes from DSM-IV-TR (APA, 2000; conduct disorder, oppositional defiant disorder, attention-deficit hyperactivity disorder, depression, general anxiety disorder, separation anxiety disorder, gender identity disorder, anorexia nervosa, and bulimia nervosa), (b) nine personality disorders and their features (avoidant, borderline, dependent, histrionic, narcissistic, obsessive-compulsive, paranoid, schizoid, schizotypal)

according to the criteria on Axis II of the DSM-IV-TR, and two personality disorders in its appendix (passive-aggressive and depressive; note that antisocial personality disorder is not assessed by the CPNI because it requires an age of 18 years to be diagnosed), (c) four neuropsychological-behavioural syndromes including mild neurocognitive disorder (in the appendix of DSM-IV-TR), postconcussion disorder, general neuropsychological dysfunction, and executive function deficits (and its three subscales: decision-making, metacognitions, and social judgement), and (d) 13 clinical scales: dangerousness, aggression, emotional lability, apathy, paranoia, psychotic thinking, emotional coldness, social anxiety, social withdrawal, self esteem problems, sleep disturbances, antisocial triumvirate symptoms, and disinhibition.

The CPNI uses a 4-point Likert scale ranging from (1) *strongly false* to (4) *strongly true*. The CPNI normative sample consists of 780 children, aged 5-17 years old. The 11 personality disorder scales have a median internal scale of reliability of 0.67 and a median test-retest reliability of 0.81 (4- to 6-week interval). The nine Axis I scales have a median internal scale reliability of 0.81 and a median test-retest reliability of 0.87. The four neuropsychological scales have a median internal scale reliability of 0.91 and a median test-retest reliability of 0.83. The 13 clinical scales have a median internal scale reliability of 0.64 and a test-retest reliability of 0.70.

The general construct validity of the CPNI scales has been demonstrated in a variety of clinical and nonclinical empirical studies (Coolidge, Segal, et al., 2000; Coolidge, et al., 2001; Coolidge, DenBoer, & Segal, 2004; Coolidge, Thede, & Jang, 2004; Coolidge, Thede, & Young, 2000; Coolidge, Thede, & Young, 2002). Coolidge, Thede, Stewart, et al. (2002) provides a summary of the CPNI reliability and construct

validity studies.

The final measure used was the Demographic Information Form. It asked for the participants' birth month and year, grade, and ethnicity. The measure included questions that sought to elicit general socioeconomic status indicators from the parents, including mother's and father's highest education level achieved and approximate total annual family income. Mother's and father's highest education level achieved was broken into 10 categories with 1 being *some high school*, 2 being *graduated high school*, 3 being *some trade school*, 4 being *completed apprenticeship*, 5 being *some college*, 6 being *college diploma*, 7 being *some university*, 8 being *undergraduate degree*, 9 being *master's degree*, and 10 being *doctorate*. Approximate total annual family income was broken into four categories with 1 being *under \$30,000 a year*, 2 being *\$30,000 to \$59,999 a year*, 3 being *\$60,000 to \$100,000 a year*, and 4 being *over \$100,000 a year*. This measure was used to describe the sample and to provide variables on which to match the targeted and control groups.

Data Collection and Recording

This section details the tasks completed by the student participants and their parents as well as how the data were collected and recorded.

Student Task Completion

Approximately 1 week after the informed consent forms were retrieved, the researcher returned to the schools and gathered together all the students whose parents allowed them to participate in the study in a location that was convenient for the school staff (the library, an empty classroom, the cafeteria, etc.). At this time they were asked to independently fill out the self-report version of the Direct and Indirect Aggression Scales

(Bjorkqvist, Lagerspetz, & Osterman, 1992). The female students used this to evaluate their own behaviour when dealing with a conflict with a classmate. The participants were not permitted to talk to each other during the administration of the DIAS, but the researcher read each item aloud to the assembled group and answered any questions they had regarding the items. It took them approximately 10 minutes to fill out the questionnaire. All of their responses were anonymous; they did not indicate their names on the questionnaires.

When the participants had completed the questionnaire they returned the questionnaire to the researcher. The researcher then gave the participant an envelope with a unique number on it. The researcher recorded the number on the envelope onto the participant's completed DIAS measure and then gave the participant the envelope to take home. These numbers were used so the researcher could preserve the anonymity of the participants while still being able to match the measures for data analysis. To preserve the confidentiality of the participants all the DIAS measures were stored in a locked file cabinet at Brock University. Only the researcher and faculty adviser had access to the data.

Parent Task Completion

Included in the envelope the students took home was a copy of the Coolidge Personality and Neuropsychological Inventory (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002), and the Demographic Information Form. The parents/guardians then filled out both forms, which took them approximately 25 minutes to complete. The responses on both forms were anonymous; the parents did not indicate their names on either form. Once the CPNI and the demographic data forms were filled out they were put

into the provided envelope, sealed, and returned to the school. The researcher returned approximately 1 week later to retrieve the envelopes. The researcher then scored the measures and the scores were inputted into SPSS 15.0 (SPSS, 2006).

Obtaining the Final Sample

To obtain the final sample, the raw scores from the self-report DIAS measure were converted to z-scores. SPSS K-means cluster analysis was performed with the standardized self-reported scores on the three aggression scales as criterion variables for forming the clusters. Five clusters with different aggression profiles were identified. The majority of the female students (61.1%) were clustered into the “nonaggressive group.” Another large percentage of students (27.4%) were classified as belonging to the “average aggression group.” The rest of the initial sample was classified into one of three highly aggressive groups: the “high relational aggression group” (8.2%), the “high direct aggression group” (1.9%) and the “extreme aggression group” (1.4%). The standardized mean scores on the aggression variables of the participants in each of the five clusters and the number of participants in each cluster are presented in Table 2.

A one-way analysis of variance was conducted in order to ensure the members of each of these clusters differed significantly from each other on self-reported physical [$F(4, 360) = 111.511, p = .000$], verbal [$F(4, 360) = 149.907, p = .000$], and relational aggression [$F(4, 360) = 200.429, p = .000$].

The 30 female students who made up Cluster 1, the highly, almost exclusively, relationally aggressive cluster became the target sample. The target sample consisted of 11 grade 6 students (36.7%), 10 grade 7 students (33.0%) and 9 grade 8 students (30.0%). They ranged in age from 11.4 years to 14.3 years ($M = 12.7$ years, $SD = 0.91$ years). The

Table 2

The Aggression Clusters With Their Average Standardized Scores on the Three Aggression Scales

Cluster	<i>n</i>	Physical	Verbal	Relational
1.High relational aggression group	30	-.46	-.22	1.54
2. Average aggression group	100	.46	1.22	.94
3. High direct aggression group	7	2.87	1.11	-.30
4. Extreme aggression group	5	3.91	2.22	1.68
5. Nonaggressive group	223	-.34	-.58	-.68

majority were Caucasian (90.0%), but Mixed ethnicity (6.7%) and Latino (3.3%) students were also included in this group. Demographic information for the target sample is presented in Table 3. Even more so than the initial sample, the target sample's parents were quite educated, with 73.3% of mothers/female guardians and 73.3% of fathers /male guardians having some post-secondary education. Over half of the mothers / female guardians (53.3%) and fathers / male guardians (56.7%) reported completing an apprenticeship program, earning a college diploma, or earning a university degree. Consistent with the initial sample, the majority of the female students in the target sample (43.3%) were members of families that reported an approximate total annual family income of \$60,000 to \$100,000.

The target sample was then matched for age, grade, school, ethnicity, mother's highest achieved education level, father's highest achieved education level, and approximate total annual family income with participants in Cluster 5, the nonaggressive cluster. This became the matched control group. Identical to the target sample, the control group consisted of 11 grade 6 students (36.7%), 10 grade 7 students (33.3%) and 9 grade 8 students (30.0%). They ranged in age from 11.4 years to 14.3 years ($M = 12.8$ years, $SD = 0.89$ years). In terms of ethnicity, the control group was mostly Caucasian (90.0%), with the other 10% being made up of students of Mixed ethnicity. Demographic information for the control group is presented in Table 3. Consistent with the target sample they were matched to, the parents of the students in the control group were very educated, with 83.3% of mothers/female guardians and 73.3% of fathers/male guardians having some post-secondary education. Similar to the target sample, 60% of mothers/female guardians and 36.7% of fathers/male guardians reported completing an

Table 3

Demographic Characteristics of Target Sample and Control Group

Variable	Target Sample ($n = 30$)		Control Group ($n = 30$)	
	n	%	n	%
Student's grade				
Grade 6	11	36.7	11	36.7
Grade 7	10	33.3	10	33.3
Grade 8	9	30.0	9	30.0
Student's ethnicity				
Caucasian	27	90.0	27	90.0
Mixed	2	6.7	3	10.0
Latino	1	3.3		
Mother's education				
Some high school	3	10.0	2	6.7
Graduated high school	5	16.7	3	10.0
Some trade school	0	0.0	1	3.3
Completed apprenticeship	0	0.0	1	3.3
Some college	5	16.7	4	13.3
College diploma	5	16.7	9	30.0
Some university	1	3.3	2	6.7
Undergraduate degree	10	33.3	8	26.7

(table continues)

Variable	Target Sample ($n = 30$)		Control Group ($n = 30$)	
	n	%	n	%
Father's education				
Some high school	3	10.0	3	10.0
Graduated high school	5	16.7	5	16.7
Some trade school	1	3.3	1	3.3
Completed apprenticeship	2	6.7	3	10.0
Some college	3	10.0	4	13.3
College diploma	9	30.0	3	10.0
Some university	1	3.3	6	20.0
Undergraduate degree	5	16.7	5	16.7
Master's degree	1	3.3		
Total annual family income				
Under \$30,000	5	16.7	6	20.0
\$30,000 – \$59,999	7	23.3	7	23.3
\$60,000 - \$100,000	13	43.3	11	36.7
Over \$100,000	5	16.7	6	20.0

apprenticeship program, earning a college diploma, or earning a university degree. Also similar to the target sample, the majority of female students in the control group (36.7%) belonged to families that reported approximate total family income of \$60,000 to \$100,000.

In order to ensure that the target sample and the control group did not differ significantly on any of the matching variables the categorical variables were quantified (e.g., *Caucasian* = 1, *Mixed Ethnicity* = 2, etc.), and a Mann-Whitney *U* test was conducted. The results indicated that the groups were evenly matched on age ($Z = -.081$; 2-tailed Asymp. Sig. = .935), school ($Z = .000$; 2-tailed Asymp. Sig. = 1.000), grade ($Z = .000$; 2-tailed Asymp. Sig. = 1.000), ethnicity ($Z = -.043$; 2-tailed Asymp. Sig. = .966), mother's/female guardian's education level ($Z = -.061$; 2-tailed Asymp. Sig. = .952), father's/male guardian's education level ($Z = .994$; 2-tailed Asymp. Sig. = .994), and approximate total annual family income ($Z = -.108$; 2-tailed Asymp. Sig. = .914).

Data Processing and Analysis

Data analysis involved analyzing the standardized scores on the CPNI. In order to explore the first research question, a multivariate analyses of variance (MANOVA) was performed on the six internalizing Axis I scales (generalized anxiety disorder, depression, separation anxiety disorder, gender identity disorder, anorexia nervosa, and bulimia nervosa) for the main effect of group (relationally aggressive and controls). Post hoc *t* tests with a modified Bonferroni correction were run on the data as appropriate. A MANOVA was also run on the three externalizing Axis I scales (conduct disorder, oppositional defiant disorder, and attention deficit hyperactivity disorder) for the main effect of group (relationally aggressive and controls). Post hoc *t* tests with a modified

Bonferroni correction were run on the data as appropriate. The modified Bonferroni procedure was conducted to help control for overinflated Type I error.

The second research question was examined by conducting a MANOVA on the 11 Axis II personality disorder scales for the main effect of group (relationally aggressive and controls). Again, post hoc *t* tests with a modified Bonferroni correction were run on the data as appropriate. Post hoc independent *t* tests were also run on specific items as appropriate.

To examine the third research question, a MANOVA was conducted on the four neuropsychological scales on the CPNI for the main effect of group (relationally aggressive and controls). Post hoc *t* tests with a modified Bonferroni correction were performed on the data as appropriate.

The fourth research question was investigated by conducting a MANOVA on the CPNI's 13 clinical scales for the main effect of group (relationally aggressive and controls). Once again, post hoc *t* tests with a modified Bonferroni correction were conducted on the data as appropriate.

Dissemination

The researcher will be modifying the format of this thesis in order to have the study's results published in a peer-reviewed journal. A copy of this study is available from the Brock University library. In addition, a condensed version of the research report was given to the school board's Superintendent of Education/Program, the Consulting Principal (Research), and to each of the 12 participating schools. Executive Summaries of the findings were provided to each participant.

Methodological Assumptions

Several assumptions were made by the researcher when carrying out this research. The most important one was the assumption that through the analysis of self-reports a group of highly, yet almost exclusively, relationally aggressive girls would emerge. Underlying this assumption is the assumption that self-reports are valid and reliable ways of studying aggression in the first place.

Further, an assumption was that females who exhibit high levels of relational aggression, without exhibiting any physical or verbal aggression, would be engaging in an antisocial act, despite the fact that society at large does not view this kind of aggression as antisocial. From this assumption comes the supposition that being highly relationally aggressive is not normative, but rather a symptom of underlying psychopathology. The study is based on this hypothesis.

A final assumption the researcher made was that the current DSM-IV-TR (APA, 2000) classification scheme is limited and is in need of revision. It is because of this assumption, and the covert nature of relationally aggressive acts, that the researcher believes these girls have not been identified as exhibiting symptoms of a mental disorder and so have received no attention or treatment from mental health professionals.

Limitations of the Study

This study has several limitations which must be acknowledged. The first is that the participants' aggression profiles were created exclusively from self-report data. By exclusively using self-reports to measure aggression, it was assumed that the participants could accurately evaluate the type of aggression they used as well as how frequently they used aggressive behaviours. It was also assumed the participants would be willing to

report their aggressive tactics honestly. This may not be the case. It is possible that they over or under estimated their aggressive behaviours or that they did not report their use of aggression honestly. Future studies should augment the self reports with peer and teacher reports of aggressive behaviours. This would make any findings more robust

Further, psychopathology was assessed in this study using a measure based on the psychiatric, categorical, diagnostic scheme used in the DSM-IV-TR (APA, 2000). This scheme narrowly focuses on clinically relevant symptoms rather than assessing a whole range of personality traits and behaviours. The limitation to this is that only those participants who exhibited clinically significant symptomatology were identified. It is possible that some females who did not exhibit clinically relevant symptoms are still at risk for developing psychopathology but the measure did not identify them.

Ethical Considerations

Due to the nature of the research problem it was imperative that the sensitive information collected would be confidential so as to avoid any possible psychological harm to the participants or harm to participants' social or school standing. To ensure this confidentiality, all the measures were completely anonymous. Unique tracking numbers were used to match the participants' measures with each other so data analysis could be completed, but no names or other identifying information was ever provided to the researcher by the participants. Data were stored in a locked file cabinet at Brock University, with only the researcher and faculty adviser having access to the data. This study was approved by the Brock University Research Ethics Committee (File #05-313).

Summary of the Purpose

The leading question this study sought to answer was: Are highly aggressive females, whose aggression is primarily relational in nature, manifesting a symptom of underlying psychopathology? This leading question was addressed through more specific queries such as:

1. Do females who are highly relationally aggressive also exhibit behaviours that are associated with Axis I disorders found in the DSM-IV-TR (APA, 2000)?
2. Do relationally aggressive females have personality traits typically associated with any of the DSM-IV-TR (APA, 2000) personality disorders?
3. Do highly relationally aggressive females have high levels of neuropsychological behavioural impairment?
4. Do highly relationally aggressive females exhibit other clinically relevant psychopathological behaviours?

CHAPTER FOUR: RESULTS

This chapter provides the analysis of the parents' responses on the CPNI (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002). Each specific research question is considered. The first question: (*Do females who are highly relationally aggressive also exhibit behaviours that are associated with Axis I disorders found in the DSM-IV-TR [APA, 2000]?*) is examined using the parent responses on the CPNI's Axis I internal syndromes scales and Axis I external syndromes scales. Scores on these scales are initially presented separately to examine the unique differences between internalizing and externalizing syndromes and then are discussed together in order to fully understand which behaviours associated with the Axis I disorders the relationally aggressive group are exhibiting. To explore the second research question: (*Do relationally aggressive females have personality traits typically associated with any of the DSM-IV-TR [APA, 2000] personality disorders?*) parents' responses on the CPNI's Axis II personality disorders scales are analyzed. Parents' responses on the CPNI's neuropsychological problems scales are examined in order to answer the third research question: (*Do highly relationally aggressive females have high levels of neuropsychological behavioural impairment?*), and the fourth question: (*Do highly relationally aggressive females exhibit other clinically relevant psychopathological behaviours?*) is answered using the parents' responses on the CPNI's clinical scales.

Data Analysis

To examine the symptoms of underlying psychopathology highly, yet almost exclusively, relationally aggressive females exhibited descriptive and inferential statistics were used. The raw scores on each of the CPNI's (Coolidge, 1998; Coolidge, Thede,

Stewart, et al., 2002) 50 scales were converted to standard *T* scores using the means and standard deviations of the normative sample, as outlined in the CPNI Manual (Coolidge, 1998).

Descriptive statistics in the form of means and standard deviations were calculated for both the relationally aggressive group and the control group on each of the CPNI's (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002) scales in order to examine the magnitude and direction of differences between the two groups. In order to explore on which specific scales the two groups (relationally aggressive and controls) differed significantly, multivariate analyses of variance (MANOVAs) were conducted on the six internalizing Axis I scales (generalized anxiety disorder, depression, separation anxiety disorder, gender identity disorder, anorexia nervosa, and bulimia nervosa), the three externalizing Axis I scales (conduct disorder, oppositional defiant disorder, and attention deficit hyperactivity disorder), the 11 Axis II personality disorder scales, the four neuropsychological scales on the CPNI, and on the 13 clinical scales. In order to minimize Type I error, all analyses were conducted using $\alpha = 0.001$.

Where significant differences were found, post hoc *t* tests with the modified Bonferroni correction (Holm, 1979) were conducted on the individual scales. Effect sizes were then calculated. In order to determine on which specific personality traits the relationally aggressive female students scored significantly higher than the controls the individual items that made up the CPNI's (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002) Axis II personality disorder scales were converted to standard *T* scores and independent *t* tests were conducted on each item.

DSM-IV-TR Axis I Disorder Symptoms Exhibited by Relationally Aggressive Females

To examine the first research question, “*Do females who are highly relationally aggressive also exhibit behaviours that are associated with Axis I disorders found in the DSM-IV-TR (APA, 2000)*” MANOVAs were conducted on the CPNI’s (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002) Axis I–Internalizing disorders and Axis I–Externalizing disorders scales. The two scales were analyzed separately and are discussed below.

Internalizing Disorders

A MANOVA was performed on the six Axis I–Internalizing disorders scales for the main effect of group (relationally aggressive and controls). The MANOVA was not statistically significant, approximate $F(6,53) = 1.32, p = 0.265$. This indicates that the two groups did not differ significantly on the scales measuring gender identity disorder, separation anxiety disorder, general anxiety disorder, depression, anorexia nervosa, or bulimia nervosa symptoms. From this we can conclude that this group of highly relationally aggressive females do not suffer from symptoms consistent with any of the DSM-IV-TR (APA, 2000) Axis I internalizing disorders any more or less than their nonaggressive peers.

Externalizing Disorders

To further explore the Axis I disorders a MANOVA was conducted on the three Axis I–Externalizing disorders scales. The MANOVA was significant, approximate $F(3,56) = 16.53, p = 0.001$. This indicates that a significant difference exists between the two groups on at least one of these scales. To examine this further, post hoc *t* tests with a modified Bonferroni correction (Holm, 1979) were conducted. The post hoc tests

revealed that scores on the conduct disorder and oppositional defiant disorder scales were significantly elevated in the relationally aggressive group. The effect sizes for these differences were large. The attention deficit/hyperactivity scale was not significant (see Table 4).

Inspection of the relationally aggressive group indicated that 20% of the students were clinically elevated, which Coolidge defines as $T \geq 60$ (Coolidge, 1998), for the conduct disorder scale and 60% were clinically elevated for the oppositional defiant disorder scale. In order to examine which subtype of conduct disorder the relationally aggressive girls were exhibiting, independent t tests were conducted on the aggressive and delinquent conduct disorder subscales. The relationally aggressive group had significantly higher mean scores on the aggressive subtype ($t = 4.744, p = 0.001$) and delinquent subtype ($t = 4.612, p = 0.001$) than the controls (see Table 4).

Taken together the results from the Axis I–Internalizing disorders scales and Axis I–Externalizing disorders scales clearly indicate that the highly relationally aggressive females exhibited symptoms consistent with two of the DSM-IV-TR (APA, 2000) Axis I disorders. Both conduct disorder and oppositional defiant disorder are considered to be externalizing disorders.

Table 4

Means, T Scores, t Values, and Correlation of Effect Size for Relationally Aggressive Group and Nonaggressive Group on the CPNI's Axis I-Externalizing Disorders Scales

	<i>T</i> scores		<i>t</i>	<i>p</i>	<i>r</i> **
	Relationally aggressive group (<i>SD</i>)	Nonaggressive group (<i>SD</i>)			
Conduct disorder (CD)	52.7 (9.9)	42.7 (3.5)	5.3	0.001*	0.56
CD—aggressive subtype	47.1 (6.9)	40.7 (2.8)	4.7	0.001*	0.52
CD—delinquent subtype	55.4 (10.6)	45.9 (4.0)	4.6	0.001*	0.51
Oppositional defiant disorder	60.9 (14.7)	39.8 (7.7)	7.0	0.001*	0.67
Attention deficit hyperactivity disorder	43.8 (8.4)	40.7 (7.7)	1.5	0.141	0.19

* Significant according to modified Bonferroni correction. ** *r* = correlation of effect size; small = 0.100, medium = 0.243, large = 0.371.

Personality Traits Associated With DSM-IV-TR Personality Disorders

Exhibited by Relationally Aggressive Females

To examine the second research question of interest, “*Do relationally aggressive females have personality traits typically associated with any of the DSM-IV-TR (APA, 2000) personality disorders?*” a MANOVA was performed on the CPNI’s (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002) 11 personality disorder scales. The MANOVA was significant, approximate $F(11,48) = 6.80, p = 0.001$, indicating a significant difference between the two groups on at least one of these scales. Post hoc t tests, with the modified Bonferroni correction, revealed that the paranoid personality disorder, borderline personality disorder, schizotypal personality disorder, narcissistic personality disorder, histrionic personality disorder, and passive-aggressive personality disorder scales were significantly different between the two groups. The relationally aggressive group was significantly elevated on the narcissistic, histrionic, and passive-aggressive personality disorder scales, with large effect sizes (see Table 5). Examination of the relationally aggressive group’s scores revealed that 47%, 23%, and 37% of the female students were clinically elevated ($T \geq 60$) on the narcissistic, histrionic, and passive-aggressive personality disorder scales respectively.

The relationally aggressive females were significantly elevated on the paranoid, borderline, and schizotypal personality disorder scales, with medium effect sizes (see Table 5). Inspection of the data revealed that 13% of the relationally aggressive group were clinically elevated ($T \geq 60$) on the paranoid personality disorder scale, and 13% of the relationally aggressive group were clinically elevated ($T \geq 60$) on the borderline

Table 5

Means, T Scores, t Values and Correlation of Effect Size for Relationally Aggressive

Group and Nonaggressive Group on the CPNI's Axis II Personality Disorders Scales

	T scores		t	p	r**
	Relationally aggressive group (SD)	Nonaggressive group (SD)			
Paranoid	50.4 (11.5)	42.6 (10.9)	2.7	0.009*	0.33
Borderline	47.1 (9.8)	39.0 (10.6)	3.0	0.003*	0.36
Obsessive- compulsive	41.4 (11.8)	40.6 (10.1)	0.3	0.776	0.04
Dependent	36.4 (10.9)	37.0 (6.9)	-0.3	0.779	0.03
Schizotypal	48.3 (7.8)	42.9 (6.3)	3.0	0.004*	0.36
Schizoid	44.5 (10.3)	42.7 (11.3)	0.6	0.522	0.08
Narcissistic	55.1 (12.8)	40.8 (8.0)	5.2	0.001*	0.56
Avoidant	40.2 (8.3)	44.4 (9.9)	-1.8	0.082	0.22
Histrionic	53.9 (10.2)	41.5 (9.3)	4.9	0.001*	0.54
Passive – aggressive	54.1 (10.5)	41.9 (8.0)	5.1	0.001*	0.55
Depressive	45.0 (9.7)	43.7 (9.8)	0.5	0.625	0.07

* Significant according to modified Bonferroni correction. ** r = correlation of effect size; small = 0.100, medium = 0.243, large = 0.371.

personality disorder scale. None of the relationally aggressive students were clinically elevated ($T \geq 60$) on the schizotypal personality disorder scale.

In order to determine which specific personality traits the relationally aggressive females, as a group, were manifesting, independent t tests were performed on the standardized T scores of the individual items that make up the CPNI's (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002) Axis II personality disorder scales. In order to minimize Type I error, $\alpha = 0.001$ for all the analyses.

The t tests revealed the relationally aggressive group was significantly elevated on 20 personality disorder items. The mean T scores, t values, and correlation of effect size for the significant items are presented in Table 6. Of the 20 significant items, the majority, 6 (30%), are traits associated with narcissistic personality disorder. They include taking advantage of other children (item 1), exaggerating abilities and accomplishments (item 5), demanding lots of praise and attention (item 12), lacking empathy (item 15), being envious and jealous of others and feeling others are envious and jealous of them (item 16), and acting like they are better than others (item 20). Four of the significant items (13%), including exaggerating emotions (item 2), rapidly shifting and shallow emotions (item 6), using physical attractiveness to draw attention to themselves (item 9), and a dramatic, yet vague, style of speech (item 19) are traits associated with histrionic personality disorder. Another four items are traits associated with passive-aggressive personality disorder. They include pouting and arguing (item 3), criticizing or putting down authority figures (item 7), resenting, resisting, or refusing to do things when asked (item 10), and getting jealous and resenting when good things happen to others (item 13). Three of the significant items (10%), including quickly changing moods (item

Table 6

Means, T scores, t Values and Correlation of Effect Size for Relationally Aggressive Group and Nonaggressive Group on Significant Individual Items from the CPNI's Axis II Personality Disorder Scales

	T scores		t	p	r****
	Relationally aggressive group (SD)	Nonaggressive group (SD)			
1. My child takes advantage of other children.	56.0 (10.7)	44.0 (3.8)	5.8	0.001*	0.60
2. I think my child exaggerates her emotions.	54.9 (8.5)	45.1 (9.1)	4.3	0.001*	0.49
3. My child pouts and argues.	54.6 (8.0)	45.4 (9.7)	4.0	0.001*	0.46
4. My child's moods change quickly.	53.5 (9.2)	46.5 (9.7)	2.9	0.006**	0.35
5. My child seems to exaggerate her abilities and accomplishments.	53.0 (10.5)	47.0 (8.6)	2.4	0.018***	0.30
6. My child's emotions shift rapidly and seem to be shallow.	56.3 (9.7)	43.7 (5.3)	6.2	0.001*	0.63
7. My child criticizes or puts down authority figures.	55.1 (10.5)	44.9 (6.2)	4.6	0.001*	0.51
8. My child has an anger problem.	54.2 (10.4)	45.8 (7.7)	3.5	0.001*	0.42
9. My child uses physical attractiveness to draw attention to herself.	55.5 (9.7)	44.5 (6.7)	5.1	0.001*	0.55
10. My child resents, resists, or refuses to do things when asked.	54.6 (9.5)	45.4 (8.3)	4.0	0.001*	0.46
11. My child bears grudges for a long time.	54.5 (9.9)	45.5 (7.9)	3.9	0.001*	0.45

(table continues)

	<i>T</i> scores		<i>t</i>	<i>p</i>	<i>r</i> ****
	Relationally Aggressive Group (<i>SD</i>)	Nonaggressive Group (<i>SD</i>)			
12. My child demands lots of praise or admiration.	52.6 (9.8)	47.4 (9.7)	2.0	0.046***	0.26
13. My child gets jealous and resents it when good things happen to others.	53.8 (11.5)	46.2 (6.4)	3.2	0.002**	0.38
14. My child is unemotional.	55.6 (11.8)	44.4 (10.0)	4.2	0.001*	0.46
15. My child lacks empathy and is not able to understand how others feel.	55.5 (11.4)	44.5 (3.5)	5.0	0.001*	0.55
16. My child is envious or jealous of others and feels they are envious or jealous of her.	53.8 (10.8)	46.2 (7.5)	3.2	0.002**	0.38
17. When hurt or insulted by others my child is quick to get angry or counter-attack.	53.9 (9.7)	46.2 (7.5)	3.3	0.002**	0.39
18. My child has hurt herself or caused trouble for herself more than once because she did not think ahead.	52.8 (11.3)	47.2 (7.7)	2.2	0.032***	0.28
19. My child has a style of speech that is dramatic but vague.	53.2 (9.9)	46.8 (9.2)	2.6	0.013***	0.31
20. My child acts like she is better than others.	54.7 (11.7)	45.3 (4.5)	4.1	0.001*	0.47

*Significant at $\alpha = 0.001$. ** Significant at $\alpha = 0.01$. *** Significant at $\alpha = 0.05$.

**** *r* = correlation of effect size; small = 0.100, medium = 0.243, large = 0.371.

4), anger problems (item 8), and not thinking ahead (item 18), are traits associated with borderline personality disorder. The final item, being unemotional (item 14), is a trait associated with schizotypal personality disorder.

From these analyses it is possible to conclude that the highly relationally aggressive students were exhibiting 20 personality traits associated with DSM-IV-TR (APA, 2000) personality disorders. These traits were associated with six different personality disorder diagnoses.

Highly Relationally Aggressive Females'

Neuropsychological Difficulties

In order to explore the third research question, "*Do highly relationally aggressive females have high levels of neuropsychological behavioural impairment?*" a MANOVA was performed on the CPNI's (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002) four neuropsychological problems scales. The MANOVA was significant, approximate $F(4,55) = 8.2, p = 0.001$, indicating a significant difference between the two groups on these scales. To further examine this difference post hoc t tests with the modified Bonferroni correction were performed on the four neuropsychological problems scales and their subscales. The t tests revealed that the scores on the postconcussion disorder scale, emotional dysfunction subscale, and social inappropriateness subscale were significantly different between the highly relationally aggressive group and the nonaggressive group (see Table 7).

The relationally aggressive group were found to be significantly elevated on the postconcussion disorder scale, which measures the 10 major categories of symptoms for postconcussion disorder as outlined in the DSM-IV-TR (APA, 2000). They include

Table 7

Means, T Scores, t Values and Correlation of Effect Size for Relationally Aggressive Group and Nonaggressive Group on the CPNI's Neuropsychological Problems Scales and Subscales

	T scores		t	p	r**
	Relationally aggressive group (SD)	Nonaggressive Group (SD)			
Mild neurocognitive disorder	42.7 (8.0)	42.2 (8.0)	0.2	0.818	0.03
Postconcussion disorder	53.5 (8.5)	42.8 (9.9)	4.5	0.001*	0.50
Executive functions of the frontal lobe	43.5 (9.4)	40.0 (8.1)	1.6	0.124	0.20
Decision-making problems	39.2 (8.5)	40.9 (8.0)	-0.8	0.430	0.10
Metacognitive problems	44.6 (8.5)	41.5 (7.8)	1.4	0.155	0.19
Social inappropriateness	50.0 (11.2)	39.8 (7.4)	4.1	0.001*	0.47
Neuropsychological dysfunction	43.0 (8.1)	41.6 (8.0)	0.6	0.525	0.09
Emotional dysfunction	56.5 (9.0)	43.2 (10.4)	5.3	0.001*	0.56
Neurosomatic complaints	46.1 (10.2)	44.5 (8.6)	0.6	0.538	0.08
Language problems	45.7 (7.2)	44.4 (5.0)	0.8	0.400	0.10
Memory difficulties	43.1 (7.9)	41.6 (6.3)	0.8	0.403	0.10
Learning problems	45.7 (6.9)	44.4 (7.8)	0.7	0.516	0.09
Perceptual-motor dysfunction	42.4 (6.4)	42.7 (5.8)	-0.2	0.870	0.02
Subcortical problems	44.7 (4.4)	45.3 (4.2)	-0.5	0.619	0.07
Delayed maturation	44.2 (3.4)	46.3 (10.5)	-1.0	0.430	0.13

* Significant according to modified Bonferroni correction. ** r = correlation of effect size; small = 0.100, medium = 0.243, large = 0.371

easily fatigued, disordered sleep, headaches, dizziness, irritability, aggression, anxiety, depression, changes in personality, and apathy. It is important to note that a diagnosis of post-concussion disorder requires a prior head trauma accompanied by a concussion as well as evidence from an independent neuropsychological examination of cognitive impairment (Coolidge, 1998). It is highly unlikely that all the female students in the relationally aggressive group had suffered head trauma accompanied by a concussion prior to participation in the study. In addition, an independent *t* test conducted on the standardized *T* scores for the 17 individual items that make up the postconcussion disorder scale revealed that the relationally aggressive group were significantly elevated on only 5 items. Three of the items, moodiness, shallow affect, and quick to anger or counterattack when feeling threatened (items 4, 6 and 17 on Table 6) are included in personality disorder scales as well and the fourth, “seems irritable” and fifth, “is touchy or easily annoyed” items are not traits associated only with head trauma.

The relationally aggressive females were significantly elevated on the emotional dysfunction subscale. This broadly measures a wide variety of emotional problems including temper tantrums, irritability, agitation, depression, apathy, state anxiety, moodiness, and personality change (Coolidge, 1998). Inspection of the relationally aggressive group's scores on this scale revealed that 40% of the relationally aggressive females were clinically elevated ($T \geq 60$) on the emotional dysfunction subscale.

In addition, the relationally aggressive group were significantly elevated on the social inappropriateness subscale. This subscale was one of three subscales (the other two, decision-making problems and metacognitive problems, were not significantly

different between the relationally aggressive group and the nonaggressive group) derived from factor analysis of all the questions on the CPNI consistent with executive deficits of the frontal lobes. The 10 items that compose it measure a broad range of traits including a lack of empathy, shallow emotions, impulsivity, social withdrawal, stubbornness, ease of being influenced by others, and socially inappropriate behaviours such as laughing at inappropriate times or acting strange or paranoid when under stress (Coolidge, 1998). This was a somewhat surprising finding, so independent t tests were performed on the standardized T scores for the 10 individual items that compose the social inappropriateness scales. The t tests revealed that the relationally aggressive females were significantly elevated on 3 items. All 3 items are also included in the personality disorder scales and include lack of empathy, rapidly shifting, shallow emotions, and not thinking ahead (items 6, 15, and 17 on Table 6).

From these analyses it is possible to conclude that the highly, yet almost exclusively, relationally aggressive females do exhibit neuropsychological behavioural impairment. This impairment appears to be affective in nature, leading to moodiness, shallow, rapidly shifting emotions, irritability, a lack of empathy, and a degree of impulsivity.

Other Clinically Significant Features

Highly Relationally Aggressive Females Possess

To investigate the fourth research question, “*Do highly relationally aggressive females exhibit other clinically relevant psychopathological behaviours?*” a MANOVA was performed on the CPNI’s (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002) 13 clinical scales. The MANOVA was significant, approximate $F(13, 46) = 5.46, p = 0.001$.

Post hoc *t* tests with the modified Bonferroni correction revealed that the highly relationally aggressive group was significantly elevated on the emotional coldness, emotionally labile, aggression, apathy, and dangerousness scales (see Table 8).

The emotional coldness scale is a clinical scale that measures inhibited affect, lack of empathy, and indifference (Coolidge, 1998). Inspection of the relationally aggressive group's scores revealed that 47% of the relationally aggressive females were clinically elevated ($T \geq 60$) on the emotional coldness scale.

The emotionally labile scale measures quick mood changes and rapidly shifting emotions (Coolidge, 1998). Emotional lability can indicate problems with emotion regulation. Inspection of the relationally aggressive group's scores on this scale revealed that 60% of the group was clinically elevated ($T \geq 60$) on this scale.

The aggression scale does not measure aggression in the traditional sense; rather it measures frequency of temper tantrums, physical altercations, visible displays of anger, and spitefulness (Coolidge, 1998). Inspection of the relationally aggressive group's scores on this measure revealed that 20% of the relationally aggressive students were clinically elevated ($T \geq 60$) on the aggression scale.

The clinical apathy scale is similar to the emotional coldness scale, as it also measures lack of empathy and inhibited affect. The apathy scale, however, also considers a lack of interest that the emotional coldness scale does not (Coolidge, 1998). Inspection of the relationally aggressive group's scores on this scale revealed that 47% of the group were clinically elevated ($T \geq 60$) on the apathy scale.

Table 8

Means, T Scores, t Values and Correlation of Effect Size for Relationally Aggressive Group and Nonaggressive Group on the CPNI's Clinical Scales

	T scores		t	Sig.	r**
	Relationally aggressive group (SD)	Nonaggressive group (SD)			
Emotional coldness	60.7 (16.5)	43.3 (5.5)	5.5	0.001*	0.58
Sleep disturbances	46.9 (9.8)	45.2 (6.7)	0.8	0.429	0.10
Emotionally labile	59.4 (12.5)	43.0 (8.6)	6.0	0.001*	0.61
Disinhibited	46.0 (9.1)	42.5 (6.8)	1.7	0.097	0.21
Aggressive	49.4 (11.0)	35.4 (6.7)	5.9	0.001*	0.36
Apathetic	58.2 (15.2)	43.2 (6.1)	5.0	0.001*	0.54
Paranoid	50.8 (11.3)	45.8 (8.4)	1.9	0.057	0.24
Dangerousness	55.7 (11.8)	38.8 (6.8)	6.8	0.001*	0.66
Antisocial triumvirate	46.0 (3.1)	45.3 (1.8)	1.0	0.310	0.14
Psychotic thinking	45.5 (6.9)	43.8 (5.6)	1.0	0.309	0.13
Social anxiety	42.1 (8.2)	43.9 (9.3)	-0.8	0.429	0.10
Social withdrawal	44.9 (9.7)	43.8 (10.2)	0.4	0.689	0.05
Self-esteem problems	43.9 (8.9)	44.9 (7.8)	-0.4	0.676	0.06

* Significant according to modified Bonferroni correction. ** r = correlation of effect size; small = 0.100, medium = 0.243, large = 0.371.

Last, the dangerousness scale measures factors like irritability, constant anger, quick mood changes, cruelty, and destroying property, which clinicians recognize as indicators of a person who has the potential to inflict harm on others or themselves (Coolidge, 1998). Inspection of the relationally aggressive group's scores on the dangerousness scale revealed that 43% of the highly relationally aggressive females were clinically elevated ($T \geq 60$) on this scale.

From these analyses it is possible to conclude that highly relationally aggressive females exhibit higher levels of emotional coldness, emotional lability, aggression, apathy, and dangerousness than nonaggressive females.

Summary

The current study had a number of important findings. A MANOVA conducted on the three Axis I–Externalizing disorders scales was significant [$F(3,56) = 16.53$, $p = 0.001$], indicating a statistically significant difference between the highly, yet almost exclusively, relationally aggressive group and the nonaggressive control group on these scales. Further analysis of this result using post hoc t tests with a modified Bonferroni correction revealed that the relationally aggressive group was significantly elevated on the conduct disorder and oppositional defiant disorder scales. This indicates that the relationally aggressive females exhibited symptoms consistent with two of the externalizing Axis I syndromes.

A MANOVA conducted on the 11 Axis II personality disorder scales was significant [$F(11,48) = 6.80$, $p = 0.001$], indicating a significant difference between the two groups on these scales. Post hoc t tests, with the modified Bonferroni correction, revealed that the paranoid personality disorder, borderline personality disorder,

schizotypal personality disorder, narcissistic personality disorder, histrionic personality disorder, and passive-aggressive personality disorder scales were significantly different between the two groups, with the highly relationally aggressive group scoring significantly higher on all 6 scales.

To determine which specific individual personality traits the relationally aggressive group expressed, independent *t* tests were run on the individual items from the CPNI's (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002) personality disorder scales. This analysis revealed that the relationally aggressive group were significantly elevated on 20 specific personality traits typically associated with DSM-IV-TR (APA, 2000) paranoid personality disorder, borderline personality disorder, schizotypal personality disorder, narcissistic personality disorder, histrionic personality disorder, and passive-aggressive personality disorder. From these analyses it is possible to conclude that the highly relationally aggressive students were exhibiting 20 personality traits associated with DSM-IV-TR personality disorders. These traits were associated with six different personality disorder diagnoses.

A MANOVA was performed on the CPNI's (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002) four neuropsychological problems scales. The MANOVA was significant, approximate $F(4,55) = 8.2, p = 0.001$, indicating a significant difference between the two groups on these scales. To further examine this difference post hoc *t* tests with the modified Bonferroni correction were performed on the four neuropsychological problems scales and their subscales. The *t* tests revealed that the highly relationally aggressive group were significantly elevated on the postconcussion disorder scale, emotional dysfunction subscale, and social inappropriateness subscale. To

further explore this finding independent *t* tests were conducted on the individual items from all three of these scales. These analyses revealed that the impairment in the relationally aggressive females appears to be affective in nature, leading to moodiness, shallow, rapidly shifting emotions, irritability, a lack of empathy, and a degree of impulsivity.

A MANOVA was performed on the CPNI's (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002) 13 clinical scales. The MANOVA was significant, approximate $F(13, 46) = 5.46, p = 0.001$. This indicates a statistically significant difference between the two groups on these scales. Post hoc *t* tests with the modified Bonferroni correction revealed that the highly relationally aggressive group was significantly elevated on the emotional coldness, emotionally labile, aggression, apathy, and dangerousness scales. From these analyses it is possible to conclude that highly relationally aggressive females exhibit higher levels of emotional coldness, emotional lability, aggression, apathy, and dangerousness than nonaggressive females.

CHAPTER FIVE: SUMMARY, DISCUSSION, IMPLICATIONS, AND FURTHER RESEARCH

Recently there has been an increasing concern over how female children are developing behaviourally and socially (Cote et al., 2001). This is particularly evident in the large number of empirical studies that have been published recently on females' use of relational aggression (see Archer & Coyne, 2005 for a review). Studies conducted on children and adolescents have found that high levels of relational aggression are positively correlated with maladaptive personality features and externalizing behaviours (Crick, 1996; Crick et al., 1997; Crick & Grotpeter, 1995; Prinstein et al., 2001). While other studies (Essau et al., 2006; Frick et al., 2003; Marsee et al., 2005) have examined the association between callous-unemotional traits with aggression and antisocial behaviours, finding strong correlations between callous-unemotional traits, antisocial behaviours, and relational aggression in females.

The purpose of the current study was to examine the association between females' who are highly, yet almost exclusively, relationally aggressive with DSM-IV-TR (APA, 2000) clinical syndromes (Axis I), personality disorders (Axis II), neuropsychological dysfunction, and other psychopathological behaviours. The purpose was initiated in order to ascertain whether girls who were highly, almost exclusively, relationally aggressive were manifesting a symptom of underlying psychopathology. This chapter will provide a summary and discussion of the salient findings, and connections will be made to existing empirical research. Implications and recommendations for future research are outlined.

Summary of Study

The current study examined the association between females' who are highly, yet almost exclusively, relationally aggressive with DSM-IV-TR (APA, 2000) clinical syndromes (Axis I), personality disorders (Axis II), neuropsychological dysfunction, and other psychopathological behaviours. The female participants completed a self-administered survey that assessed their level of physical, verbal, and relational aggression. Based on their scores on the physical, verbal, and relational scales, participants were separated into five aggression clusters. The highly, yet almost exclusively, relationally aggressive cluster became the target sample. The participants were then matched on a variety of variables to students in the nonaggressive cluster. The parents of the female participants completed a standardized measure of children's and adolescent's psychological functioning. The parents' responses on the various scales of the standardized measure for the relationally aggressive group and the nonaggressive group were then compared using multivariate analyses of variance. Where significant differences emerged, post hoc *t* tests were performed and in some cases independent *t* tests were conducted on certain standardized individual items from the parent questionnaires.

Discussion of Findings

The findings related to each of the four areas of concern are discussed. Specifically, the associations that emerged between high levels of relational aggression and DSM-IV-TR (APA, 2000) Axis I clinical syndromes are summarized and examined in relation to previous research on this topic. Moreover, the differences between the relationally aggressive group and nonaggressive group on personality traits characteristic

of DSM-IV-TR (APA, 2000) Axis II personality disorders are discussed through the comparison of findings from past research about personality traits found in relationally aggressive females. Furthermore, the relationally aggressive females' neuropsychological behavioural impairments and other psychopathological behaviours and traits are examined. Finally, the findings are situated within Pincus's (2005a, 2005b) contemporary integrative interpersonal theory of personality disorders to determine if the relationally aggressive females were found to be manifesting symptoms of underlying psychopathology. Specific implications and recommendations related to these findings are provided where relevant.

Relational Aggression's Associations with DSM-IV-TR Axis I Clinical Syndromes

The first research question was concerned with associations between high levels of relational aggression and DSM-IV-TR (APA, 2000) Axis I clinical syndromes. Contrary to findings reported by Werner and Crick (1999), who found relational aggression to be related to increases in self-harm behaviour, affective features of depression, and bulimic symptoms in their female participants, I found no significant differences between the relationally aggressive female students and their nonaggressive peers on measures of internalizing disorders. A possible reason for the discrepancy in findings is that Werner and Crick's participants were much older than the participants in this sample, as they were all young adults enrolled in a postsecondary institution. It is possible that as they grow older the relationally aggressive females who participated in this study may also develop internalizing problems.

Yet, the highly relationally aggressive group was significantly elevated on symptoms associated with conduct disorder and oppositional defiant disorder compared

to the nonaggressive controls in the current study. Furthermore, 20% of the relationally aggressive group were clinically elevated on the conduct disorder scale, and 60% of the relationally aggressive female students were clinically elevated on the oppositional defiant disorder scale, indicating they were exhibiting enough symptoms of sufficient severity to possibly qualify for a diagnosis of the disorder. These findings are consistent with previous studies that found highly relationally aggressive females to be more likely to experience externalizing symptoms associated with conduct disorder and oppositional defiant disorder than females who were not as relationally aggressive (Keenan, Coyne, & Lahey, 2008; Prinstein et al., 2001; Tiet et al., 2001). A key difference between this study and those conducted previously, however, is that this study did not statistically control for physical and verbal aggression but rather only examined female students who were highly, yet almost exclusively, relationally aggressive. This indicates that females whose aggression is almost exclusively relational seem to be at a substantial risk for developing externalizing behaviour problems. High levels of physical and verbal aggression as well as relational aggression are not required for the risk to be present.

Interestingly, the relationally aggressive group was significantly elevated on symptoms of both the aggressive and delinquent subtypes of conduct disorder in the current study. This finding should be interpreted with caution, however, as the two items on which the relationally aggressive students visually appear to be elevated in the aggressive subtype scale (“is cruel to others,” and “bullies, threatens or scares others”) are not nearly as physically aggressive as the other items, such as “robbed someone face to face,” which are more typical of males’ conduct problems (Moffitt et al., 2001).

Several studies, such as E.J. Costello et al. (2003) and Somersalo et al. (1999), have found a link between conduct disorder and depression in females, with the two disorders often being comorbid. Yet, in the current study I did not find evidence for this link. The relationally aggressive group were not significantly elevated on the depression scale compared to the nonaggressive controls. One possible explanation for this finding is that there are different subgroups of conduct disordered females with different pathways accounting for the conduct problems.

These findings clearly indicate that highly, yet almost exclusively, relationally aggressive females do exhibit symptoms associated with DSM-IV-TR (APA, 2000) Axis I clinical syndromes at higher levels than nonaggressive females. Specifically, they exhibited elevated symptoms of two externalizing disorders, conduct disorder, and oppositional defiant disorder. Both of these disorders are composed of a variety of antisocial behaviours, indicating that high levels of relational aggression in females are a risk factor for antisocial behaviour.

Relational Aggression's Associations with DSM-IV-TR

Axis II Personality Disorder Traits

The second research question was concerned with determining if high levels of relational aggression in female students were associated with any personality traits typically associated with DSM-IV-TR (APA, 2000) Axis II personality disorders. The current study found that the highly relationally aggressive females were significantly elevated on traits associated with paranoid personality disorder, borderline personality disorder, schizotypal personality disorder, narcissistic personality disorder, histrionic personality disorder, and passive-aggressive personality disorder. The strongest

associations were found with traits typically characteristic of individuals suffering from narcissistic, histrionic, and passive-aggressive personality disorders.

The fact that the relationally aggressive group were substantially elevated in symptoms for six different personality disorders illustrates the problems inherent in the DSM-IV-TR's (APA, 2000) atheoretical, categorical approach to classifying personality pathology. This study's findings lend support to Clark's (1992) argument that the personality criteria are not optimally grouped into disorders and do not accurately reflect trait dimensions. Moreover, these findings serve to illustrate the comorbidity issues that are prevalent in personality disorder research, diagnosis, and treatment. The fact that the relationally aggressive group, as a whole, is exhibiting symptoms characteristic of six Axis II disorders and two Axis I disorders simultaneously calls into question the utility of the diagnoses.

To better understand which specific personality traits the relationally aggressive female students were manifesting, individual personality items from the CPNI (Coolidge, 1998; Coolidge, Thede, Stewart, et al., 2002) were examined. What emerged were 20 personality traits that distinguished the highly relationally aggressive group from their nonaggressive peers. Consistent with Werner and Crick (1999), I found that the highly relationally aggressive females exhibited affective instability, anger problems, and a degree of impulsivity, all of which are features of borderline personality disorder.

Similar to previous research (Cooke & Michie, 2001; Frick et al., 2003) I found that the highly relationally aggressive group exhibited traits which have been identified as being characteristic of the psychopathy construct. Such traits include narcissistic traits such as taking advantage of other children, exaggerating abilities and accomplishments,

rapidly shifting, shallow emotions, and acting like they are better than others. Moreover, they also include callous-unemotional traits such as hiding emotions or being unemotional and lacking empathy. Furthermore, they include impulsive traits evidenced by not thinking ahead. Consistent with previous findings (Marsee & Frick, 2007; Marsee et al., 2005) this study found that the highly relationally aggressive females exhibited all of the psychopathic traits listed above, while the nonaggressive controls did not.

This finding is important as the psychopathy construct, which focuses on a particular interpersonal (e.g., callous use of others for one's own gain), affective (lacking empathy or guilt), self-referential (extremely inflated sense of importance), and behavioural (impulsive, irresponsible) style has proven useful in differentiating an important subgroup of antisocial adults (see Hart & Hare, 1997 for a review). Adults who possess these psychopathic traits have been shown to be extremely antisocial with a propensity for high levels of aggression and often violence. Recently empirical and theoretical work has been conducted to extend the psychopathy construct to children and youth (see Frick, 2007; Frick & Marsee, 2006 for reviews)

Frick et al. (2003) and Kruh, Frick, & Clements (2005) have found that psychopathic traits, particularly the callous-unemotional traits, seem to be uniquely associated with a severe pattern of aggression characterized by proactive aggressive acts. In females only, callous-unemotional traits have been found to be associated with high levels of relational aggression and serious delinquent acts (Chamberlain & Moore, 2002; Frick & Marsee, 2006; Frick et al., 2003; Marsee et al., 2005; Silverthorn & Frick, 1999).

The link that I found between high levels of relational aggression and psychopathic traits is especially important due to the finding that the presence of

psychopathic traits, particularly callous-unemotional traits, seems to designate a distinct developmental pathway in females to serious conduct problems that is associated with a temperamental style characterized by reduced emotional reactivity to the distress of others (Frick, 2007). The fact that high levels of relational aggression, in the absence of high levels of verbal and physical aggression, were found to be associated with a lack of empathy and a general lack of affect (callous-unemotional traits) further supports the importance of relational aggression in studying the development of antisocial tendencies in females.

*Relational Aggression, Neuropsychological Dysfunction,
and other Psychopathological Behaviours*

The third and fourth research questions were concerned with the association between high levels of relational aggression in females and neuropsychological behavioural impairment and other psychopathological behaviours. In the current study the relationally aggressive group was significantly elevated on the postconcussion disorder scale compared to the nonaggressive controls. This finding requires some clarification, however, as further analysis of the individual items that make up the postconcussion disorder scale revealed that the relationally aggressive females were significantly higher than their nonaggressive peers only on items that had to do with regulating emotion such as quickly changing moods, irritability, touchiness, quick temper, and rapidly shifting, shallow emotions.

Complementing the above finding, analysis of the individual items on the social inappropriateness subscale evinced that the highly relationally aggressive students possess shallow, rapidly shifting emotions and a tendency not to think ahead. The

analysis of the individual items on the social inappropriateness scale also revealed the highly relationally aggressive females were significantly elevated on the item that measured a lack of empathy. Furthermore, the relationally aggressive group was found to be significantly elevated on the emotional dysfunction subscale.

Taken together these findings appear to indicate that the relationally aggressive group exhibits an emotion regulation deficit which would imply that their high levels of relational aggression are in reaction to anger due to a perceived provocation or threat. This is consistent with Marsee and Frick (2007), who found in their detained female sample that reactive relational aggression was associated with poorly regulated emotion. Adding further support to this interpretation, in the current study the relationally aggressive students were significantly elevated on the emotionally labile and aggression scales, both of which measure elements of emotional dysregulation, compared to nonaggressive controls. Furthermore, Crick (1995) found that children who engaged in relationally aggressive behaviours were more likely than those children who did not engage in such behaviours to report heightened anger and distress in response to hypothetical relationship conflicts. They did not report similar levels of anger and distress in response to instrumental provocations, such as another child breaking one of their toys. All of these data support Conway's (2005) assertion that highly relationally aggressive individuals may feel high levels of distress in relational conflict situations and that they reactively relationally aggress in order to attempt to regulate their emotions.

The difficulty is that this hypothesis is in direct opposition to this study's finding that the highly relationally aggressive group was significantly higher on the clinical emotional coldness and apathy scales, indicating a pronounced lack of empathy, a lack of

care, and inhibited affect. Previous studies (Chamberlain & Moore, 2002; Frick & Marsee, 2006; Frick et al., 2003; Marsee et al., 2005; Silverthorn & Frick, 1999) have found strong associations between a lack of empathy and inhibited affect (callous-unemotional traits) and relational aggression in females.

One possible explanation for these apparently contradictory findings is that there are two subgroups of highly relationally aggressive females. One subgroup would use relationally aggressive behaviours as a strategy to regulate their emotions. This group would primarily use reactive relational aggression in order to maintain control over their social status and relationships when they felt their position in the social hierarchy was being threatened or when they were angered. They would be the females who exhibited high levels of emotional dysfunction. The other subgroup would use high levels of relational aggression more proactively in order to achieve social and material gains. These females would be the ones who exhibited a lack of empathy and inhibited affect, the callous-unemotional traits. Marsee and Frick (2007) provide some empirical support for this hypothesis, as they found reactive relational aggression was associated with emotional dysregulation while proactive relational aggression was associated with callous-unemotional traits and positive outcome expectations for aggression.

Further support for this hypothesis comes from the current study. Examining the standard deviations of the *T* scores on the individual personality traits which the relationally aggressive group and nonaggressive group significantly differ on (see Table 6) it becomes apparent that the relationally aggressive group is much more heterogeneous with regard to certain traits than the nonaggressive group is. For example, on the "My child lacks empathy and is not able to understand how others feel" item, the relationally

aggressive group's scores ($M = 55.5$, $SD = 11.4$) are much more spread out than the nonaggressive group's ($M = 44.5$, $SD = 3.5$), indicating some of the relationally aggressive group is severely lacking in empathy while some other members are not. The same pattern, although not as pronounced, is seen in the item "My child has an anger problem" where the relationally aggressive group's ($M = 54.2$, $SD = 10.4$) scores are again more varied than the nonaggressive group's ($M = 45.8$, $SD = 7.7$), indicating not all members of the relationally aggressive group have an anger problem to the same degree.

Future research could focus on these potential differences as it is possible that proactive and reactive relational aggression represent unique pathways to antisocial behaviour, each with its own characteristics and outcomes. These two pathways may require drastically different treatment approaches (Marsee & Frick, 2007). For example, treatments for females who engage in more reactive relational aggression perhaps should focus on better emotion regulation and anger management skills. N. Goldstein, Dovidio, Kalbeitzler, Weil, and Strachan (2007) piloted an anger management intervention which targets both relational and physical reactive aggression in a sample of female juvenile offenders. Although the sample size was quite small, the program appears quite promising and the researchers are moving forward with larger scale efficacy studies. Interventions for the group that proactively use relational aggression could be more effective if they included a component to address these females' lack of concern for others. Moreover, the proactively relationally aggressive females would benefit from a cognitive-behavioural component that addressed perceptions of the usefulness of aggression for obtaining their social and material goals. It appears to be very important that, before any intervention is undertaken in this group, the proactively relationally

aggressive students are convinced it is in their best interest to apply the strategies they are taught; otherwise the intervention will not be effective (Frick, 2007).

Implications for Theory: Relational Aggression and Personality Pathology

The overarching objective of this study was to determine if females who are highly, yet almost exclusively, relationally aggressive exhibited a symptom of underlying psychopathology, specifically personality pathology. Pincus (2005a, 2005b) has developed a theory of personality disorder, the CIIT theory, which proposes a definition of what constitutes a personality disorder. The first stipulation of Pincus's definition is that, in a large range of situations, the individual exhibits internalized relational patterns associated with the activation, achievement, or frustration of salient developmental goals (such as separation-individuation, the experience of self-esteem and positive affects, or the development of gender identity), traumatic learning, and regulatory metagoals. These internalized patterns lead to interference with accurate encoding of new interpersonal situations, generate inflexible, extreme and/or maladaptive transaction cycles, and reduce the contingency between the behaviour of the individual and the behaviour of others or the normative situational press.

In the current study the highly relationally aggressive group engage in a wide variety of behaviours associated with regulatory metagoals that lead to maladaptive transaction cycles which reduce the contingency between the behaviour of the individual and the behaviour of others. For example, it was found that the relationally aggressive females exaggerated their abilities and accomplishments, criticized and put down authority figures, demanded praise and admiration, and acted like they are better than others. All of these behaviours are enacted in order to maintain their own self-esteem—

they are self-regulating behaviours. In addition, it was found that the relationally aggressive females were jealous and envious of others, so in order to maintain their own self-esteem they would relationally aggress—which is a maladaptive transaction cycle. The relational aggression is not connected to any tangible relational exchange between the individual the relationally aggressive student is jealous or envious of and the relationally aggressive student; thus there is a disconnect between the behaviour of the relationally aggressive student and their victim.

The relationally aggressive group in the current study were found to have problems with emotional regulation. Whenever they are in interpersonal situations that elicit anger, frustration, or fear, their internalized response is to use relational aggression in order to regulate their own emotions. A possible scenario which illustrates this point is highlighted in the following example. A new female student has joined the class. She is fairly outgoing and begins introducing herself to everyone. This introduces a new interpersonal situation to the individuals in the class. A highly relationally aggressive female encodes this new interpersonal situation in a distorted way; she sees the new student as a threat to herself. She believes this new student is trying to “move in” on her relationships. Pincus (2005a, 2005b) refers to this as parataxic distortion. She is afraid the new student may succeed, causing anxiety. This anxiety activates the highly relationally aggressive student’s internalized emotion regulating mechanism, which leads her to relationally aggress against the new student. This is the maladaptive interpersonal behaviour. As the new student was simply introducing herself to the other students in the class and was, in reality, no threat at all, there is a disconnect between the interpersonal input and output.

The previous example involved reactive relational aggression but Pincus's (2005a, 2005b) theory can also be applied to more proactive relational aggression. For example, in the current study the relationally aggressive group was found to lack empathy, be unemotional, and take advantage of other children, all of which have been classified as callous-unemotional traits. In this possible scenario a highly relationally aggressive female decides she would like to begin a romantic relationship with a male in her class. This particular male, however, already has a girlfriend he has been seeing for quite some time. In order to achieve her motive she manipulates another female student into going over to talk to the male. This is the first instance of a maladaptive transaction cycle (Pincus, 2005a, 2005b). The highly relationally aggressive female then begins a rumour-spreading campaign that the male and the female she manipulated have started a romantic relationship. This, of course, gets back to the male's girlfriend, resulting in their dissolving their romantic relationship. The highly relationally aggressive student next begins to socially isolate the female student she manipulated. Once this is accomplished she begins a romantic relationship with the male in question. As the relationally aggressive student lacks empathy and has inhibited affect, she does not care that her actions have hurt three people; she only cares that her own motives have been met. Although the relational aggression led to the successful achievement of her developmental goals, the behaviour would still be considered a maladaptive transaction cycle as individuals had harm inflicted upon them (Pincus 2005a, 2005b). There is a disconnect between the behaviour of the relationally aggressive student and the situational press.

In both possible scenarios Pincus's (2005a, 2005b) first stipulation is met. His

second stipulation is that disturbances like those outlined above lead to maladaptive self-, emotion-, and field-regulatory strategies that generate self-defeating and nonnormative interpersonal behaviour. This stipulation is a bit more contentious as recently some researchers (Bowie, 2007; Chesney-Lind, Morash, & Irwin, 2007; Sippola, Paget, & Buchanan, 2007; Underwood et al., 2001a; Xie, Swift, Cairns, & Cairns., 2002) have argued that relational aggression can be adaptive for females. Seagrave and Grisso (2002) explicate this further, contending that a lack of empathy, grandiosity, and blaming others for your mistakes, all traits the current study found the highly relationally aggressive girls possess, quite often are transient features of adolescence which do not manifest into traits characteristic of the mature adult. Seagrave and Grisso predicate that adolescence is a time when individuals “try on” a variety of identities and this leads to some appearing to have rapidly shifting, shallow emotions. As a result they conclude it is risky to characterize any of those traits as “maladaptive” in adolescents. To date, no large-scale longitudinal studies have examined the stability of relationally aggressive behaviours or personality traits associated with them. These studies are required before any firm conclusions can be made, but numerous studies have found relational aggression to be associated with a variety of antisocial outcomes (Chamberlain & Moore, 2002; Frick & Marsee, 2007; Frick et al., 2003; Marsee et al., 2005; Silverthorn & Frick, 1999).

It is quite likely that certain levels of relational aggression, grandiosity, lack of empathy, and rapidly shifting emotions are normative in adolescence, but this study examined only highly relationally aggressive females (over one and a half standard deviations above the mean level of relational aggression for their age and sex) and found equally high levels of personality traits that are associated with DSM-IV-TR (APA,

2000) personality disorders, traits that are, by their very inclusion in the diagnostic categories, considered maladaptive. Additionally, in the current study I found that the highly relationally aggressive group who possess these personality traits already, in early adolescence, are exhibiting antisocial behaviours associated with oppositional defiant disorder and conduct disorder, some at clinical levels. From these findings it appears reasonable to conclude, at least at this point in time, that these relationally aggressive females are exhibiting maladaptive self-, emotion-, and field-regulatory strategies that generate self-defeating and nonnormative interpersonal behaviour. This satisfies Pincus's (2005a, 2005b) second stipulation in his personality disorder definition.

Pincus's (2005a, 2005b) third stipulation is not a stipulation that must be met in all cases. Pincus suggests that individuals who are suffering from a personality disorder often have no insight into their condition. That is, individuals will deny experiencing any interpersonal distress related to their nonnormative behaviours. Perhaps this is why personality disordered individuals rarely seek treatment of their own volition. This stipulation was not tested in the current study. Future research should examine whether highly relationally aggressive females experience any interpersonal distress as a result of their relationally aggressive behaviours.

After situating this study's findings in the context of Pincus's (2005a, 2005b) CIIT of personality disorders it is possible to conclude that the highly, yet almost exclusively, relationally aggressive females are manifesting a symptom of underlying personality pathology. A few cautions must be made in regard to this conclusion however. First, these findings do not apply to all females who are relationally aggressive, only to those who are *highly* relationally aggressive. A certain amount of relational

aggression has been shown to be normative in females (Underwood et al., 2001a; Xie et al., 2002) and it appears that only at high levels is it maladaptive. Second, at this time, in the absence of longitudinal studies, it is not warranted to conclude that this personality pathology or high level of relational aggression will remain stable into adulthood.

Implications for Practice

Interventions which focus specifically on relational aggression and the personality traits found to be associated with high levels of it should be developed as soon as possible. Underwood (2003) contends that relational aggression and social prominence dynamically interact and increase over time. Without intervention, future behaviour and relationship problems may arise for females who, on the surface, appear to be thriving socially. Underwood goes on to state that effective interventions must address individual behaviours as well as peer group dynamics. As the current study has demonstrated, high levels of relational aggression appear to be a symptom of underlying personality pathology. As personality traits, at least in adults, are fairly stable, it is important that interventions begin early to prevent the highly relationally aggressive behaviours and associated personality traits from forming and becoming resistant to change over time.

Irvin, Tobin, Sprague, Sugai, and Vincent (2004) found that schools that implement positive behavioural support strategies and focus on creating and maintaining a positive school climate or culture decreased all forms of aggression. It appears that attending to school climate and behaviourally teaching prosocial skills may decrease the likelihood of students interacting in aggressive ways. Prosocial skills programs and creating a positive school climate could reduce the likelihood of relationally aggressive actions being tolerated, but they likely would not stop highly relationally aggressive

females from aggressing. Individual or group therapy focusing on anger management and cognitive behavioural therapy would be more appropriate for that purpose (D.C. Smith, Larson & Nuckles, 2006). Currently there have been no large-scale efficacy studies that have examined interventions for relational aggression in females, but it is possible that relaxation training, cognitive restructuring, social problem solving, skills training, and feedback tailored specifically to the needs of relationally aggressive females may lead to positive outcomes (Smith et al., 2006).

A psychoeducational prevention/intervention program such as *EQUIP for Educators* (EFE; DiBiase, Gibbs, Potter, & Spring, 2005), which focuses on preventing inaccurate thoughts and beliefs from consolidating into parataxic distortions, and remediating those distortions once they have formed, holds promise as an intervention for relational aggression. EFE emphasizes cultivating a positive youth culture and on helping students develop empathy, which could prove beneficial in the treatment of females who are highly relationally aggressive. Preliminary research (DiBiase, in press; DiBiase, Gibbs, Brugman, van der Velden, & Westerlaak, 2008) has demonstrated that EFE is effective in correcting cognitive distortion, reducing aggression and frustration, improving social skills, and improving sociomoral developmental delays. Further research is needed, however, to determine just how effective EFE is for treating relational aggression in females.

Professional development programs for teachers and administrators which educate them on how to identify the signs of relational aggression and its potentially damaging effects may assist in the reduction of the amount of relational aggression that occurs in the schools. Through professional development, teachers and school administrators could

be made aware that engaging in high levels of relational aggression is not normative and may be a symptom of underlying psychopathology. Craig et al. (2000) found that teachers who had a developed knowledge of relational aggression were more likely to identify, intervene in, and manage relational aggressive incidents. Craig et al. (2000) also found that witnessing and recognizing relationally aggressive acts, as well as possessing moderate to high levels of empathy, were predictive of teachers having an intolerant attitude toward relationally aggressive behaviours. Teacher professional development programs could lead to highly relationally aggressive females being identified and referred for psychological services. This early preventative strategy may serve to provide assistance to the female relationally aggressive students in managing their behaviours as well as providing early remediation for any possible underlying psychopathology.

Yoon et al. (2004) argue that schools should include parents/guardians in their programming efforts to reduce the expression of relationally aggressive behaviours. The rationale for improving parent's/guardian's knowledge, skills, and attitudes toward relational aggression is that these destructive behaviours may be modeled by family members. Teacher conferences, guest speakers, and whole-school assemblies are all media that schools could use in order to highlight the seriousness of relational aggression as well as to outline the school's plan for reducing these destructive acts.

Future Research

The current study was unique in that it examined a community sample of highly, yet almost exclusively, relationally aggressive females and found them to exhibit a range of symptoms characteristic of DSM-IV-TR (APA, 2000) Axis I and Axis II disorders. Longitudinal studies should be conducted in order to determine how stable high levels of

relational aggression and the maladaptive personality traits and antisocial behaviours associated with them are. These studies should, ideally, begin in early childhood and continue into adulthood in order to give an accurate picture of the stability of these traits and behaviours.

Further, it may be particularly beneficial for researchers to examine proactive and reactive relational aggression to determine if these two different forms differentiate two (or more) subgroups of highly relationally aggressive females. If so, consideration of specific maladaptive personality traits and behaviours which are associated with each group should be investigated. In addition, it would be useful to determine if highly aggressive females differ from their peers on measures of intelligence and academic functioning. More important, intervention and prevention programs which target relational aggression and the specific personality traits found to be associated with high levels of it should be developed. Once developed, efficacy studies on these intervention programs should be conducted to determine their effectiveness.

Summary

Relational aggression has been associated with negative outcomes in numerous studies (Chamberlain & Moore, 2002; Frick & Marsee, 2006; Frick et al., 2003; Marsee et al., 2005; Silverthorn & Frick, 1999). The results of the current study suggest that high levels of relational aggression, in the absence of physical and verbal aggression, are associated with symptoms of DSM-IV-TR (APA, 2000) Axis I oppositional defiant disorder and conduct disorder and a wide variety of maladaptive personality traits associated with DSM-IV-TR Axis II paranoid, borderline, narcissistic, histrionic, schizotypal, and passive-aggressive personality disorders. When situating the findings

within Pincus's (2005a, 2005b) CIIT theory of personality disorder, it became possible to conclude that the highly relationally aggressive females were exhibiting symptoms of underlying personality pathology.

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Appendix
Brock University Research Ethics Clearance



**Brock
University**

Office of Research Services
Research Ethics Office

St. Catharines, Ontario, Canada L2S 3A1
T: 905-688-5550, Ext. 3035/4876 F: 905-688-0748

www.brocku.ca

DATE: July 4, 2006

FROM: Linda Rose-Krasnor, Chair
Research Ethics Board (REB)

TO: Ann-Marie DiBiase, Education
Michael Savage

FILE: 05-313 SAVAGE

TITLE: Psychological Factors That Relate to Female Covert Bullying And Relational Aggression

The Brock University Research Ethics Board has reviewed the above research proposal.

DECISION: Accepted as clarified; however, the proposed method for returning questionnaires involves potential risk to children's confidentiality. To protect the confidentiality of child participants, please provide parent and child participants with separate envelopes in which to seal their responses.

In addition, please note on information/consent forms that parents and children should fill out their respective questionnaires independent of one another and then seal responses in the appropriate envelope.

This project has received ethics clearance for the period of July 4, 2006 to January 31, 2007 subject to full REB ratification at the Research Ethics Board's next scheduled meeting. The clearance period may be extended upon request. *The study may now proceed.*

Please note that the Research Ethics Board (REB) requires that you adhere to the protocol as last reviewed and cleared by the REB. During the course of research no deviations from, or changes to, the protocol, recruitment, or consent form may be initiated without prior written clearance from the REB. The Board must provide clearance for any modifications before they can be implemented. If you wish to modify your research project, please refer to <http://www.brocku.ca/researchservices/forms> to complete the appropriate form **Revision or Modification to an Ongoing Application**.

Adverse or unexpected events must be reported to the REB as soon as possible with an indication of how these events affect, in the view of the Principal Investigator, the safety of the participants and the continuation of the protocol.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of any research protocols.

The Tri-Council Policy Statement requires that ongoing research be monitored. A Final Report is required for all projects upon completion of the project. Researchers with projects lasting more than one year are required to submit a Continuing Review Report annually. The Office of Research Services will contact you when this form **Continuing Review/Final Report** is required.

Please quote your REB file number on all future correspondence.

LRK/bb